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CUSTOMER SERVICE ANALYSIS OF
TACTICAL AIR COMMAND
BASE LEVEL SUPPLY SUPPORT

THESIS

Esperanza Flores, B.S.
Captain, USAF

AFIT/GLM/LSM/90S-17

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CUSTOMER SERVICE ANALYSIS OF
TACTICAL AIR COMMAND
BASE LEVEL SUPPLY SUPPORT

THESIS

Presented to the Faculty of the School of Systems and
Logistics of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Esperanza Flores, B.S.

Captain, USAF

September 1990

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Esperanza Flores

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Abstract

The general purpose of this study was to evaluate the perceptions of TAC Base Supply major customers. The research had five major objectives: 1) identify the service criteria important to the major customers of TAC Base Supply; 2) identify their perceptions of Base Supply performance; 3) measure the range of variation between customer segments; 4) identify opportunities available to Base Supply for improving customer satisfaction; and 5) provide a benchmark for future evaluations of Base Supply customer satisfaction.

The research methodology developed to meet the research objectives was based on that used by the leading experts in the field of customer service.

The research identified a total of 20 criteria rated as very important to TAC supply major customers. In addition, the findings suggested that the majority of major customers perceived significant shortfalls in Base Supply support. The identification of important criteria and the evaluation of perceptions of performance highlighted the opportunities available to TAC Base Supply for improving customer service satisfaction of its major customer base.

This study provided additional evidence of the importance of customer service, and it provided a benchmark for evaluating Base Supply customer satisfaction.

CUSTOMER SERVICE ANALYSIS OF TACTICAL AIR COMMAND
BASE LEVEL SUPPLY SUPPORT

I. Introduction

During the last 10-15 years, the emphasis firms in the private sector have placed on customer service and customer satisfaction has been steadily increasing. According to customer service experts, two developments have fueled this emphasis: a growing awareness of the importance of personal service in the emerging service economy, and increasing competition for market share (1:50). In a global market environment, it has become increasingly difficult for companies to achieve product differentiation. Many companies offer the same product, and often for the same price. Consequently, competing solely on the basis of product or price is insufficient. The principal determinant of success has become excellence in customer service (7:24).

Customer Service Defined

Leading experts agree the meaning of customer service is subject to wide interpretation (29:113). Some companies define customer service in terms of performance standards, a philosophy, an attitude, or a process that took place between the supplier and the customer. In addition, it is not unlikely for suppliers and their customers to have a very different opinion of what customer service is. Keeping

that in mind, La Londe and Zinszer defined customer service as "a customer oriented corporate philosophy which integrates and manages all of the elements of the customer interface within a predetermined optimum cost service mix: (16:iv). Stock and Lambert defined it as "the measure of how well the logistics system is performing in creating time and place utility for a product, including postsale support" (29:113). These two definitions are deemed appropriate for Base Supply and the military environment in which it operates. A customer oriented philosophy is indeed highly desirable, if not necessary, in an organization whose responsibility it is to support customers with great diversity of military missions. But measuring how well Base Supply is performing in creating time and place utility for items that could ultimately determine the readiness of a fighting wing or a bomb wing is nothing less than imperative.

General Issue

Even though the importance of customer service has been clearly established in recent years, many managers still do not know just how satisfied or unsatisfied their customers are because they do not actively seek their feedback. If companies receive only a few and sporadic complaints, they may wrongfully assume all is well on the customer service front. But surveys have shown customers often do not bother to complain. A survey conducted in 1988 by The Technical

Assistance Research Program, a Washington, DC consulting agency, revealed that even though a dissatisfied customer did not file a complaint, he told his story to at least 10 people. On the other hand, a happy customer told his story to at least five people (11:38). In a survey conducted by the Forum Corporation of 2,374 customers from 14 organizations more than 40 percent listed poor service as the number-one reason for switching to the competition. Only 8 percent listed price (3:25). Additionally, results of a 1988 Gallup Survey on consumer issues, conducted for the American Society for Quality Control, demonstrated that the majority of consumers equated high quality service with courtesy, promptness, and the perception that their needs are being satisfied. Price was infrequently mentioned (13:33-34).

The companies committed to superior customer service, however, routinely survey their customers to determine what they want and expect, and set customer service levels accordingly. Examples of companies that have achieved resounding success in customer satisfaction were: IBM, Hewlett-Packard, Disney, McDonald's, and Frito-Lay. These companies put into practice what Peters and Waterman identify as the key factors to customer satisfaction in their book "In Search for Excellence": get close to the customer, and instill an obsessive concern for customer service into the corporate culture (23:14).

As a result of this growing concern with customer satisfaction, consulting firms specializing in customer service training programs have begun to emerge across the country. At the time of this writing, some of these firms conducted only in-house training while others also held open sessions. Examples of these were: Better than Money Corporation in Bloomington, MN; Career Development Seminars and Keye Productivity Center in Kansas City, MO; Kaset, Inc. in Tampa, FL; Education Technology Consortium in Waltham, MA; and Zenger-Miller in Cupertino, CA (1:50).

At the heart of the customer satisfaction issue, however, is the level of inventory a company is willing to carry to protect itself against stockouts (29:397). After all, any additional services a company provides would be insufficient if customers cannot obtain the item they needed when they needed it. But protection against stockouts results in increased inventory carrying costs because the higher the percentage of customer demands satisfied, the greater the level of inventory that was needed to provide that satisfaction. Hence, companies were faced with the formidable challenge of finding the optimum tradeoff between service and costs.

Like companies in the private sector, Base Supply seeks to satisfy its customers by maintaining a level of inventory that will satisfy customer demands while minimizing inventory costs. To this end, a safety or buffer stock is held in Base Supply warehouses. Safety stock is inventory

held in excess of replenishment stock to cover for short-range variations in demand and leadtime, also referred to as order and shipping time (29:400).

The current method used by Base Supply to determine the optimum level of safety stock is based on a C factor. The C factor "is a multiplier of the safety level and is used to set the percent of time materiel should be on hand to support a customer during a replenishment order" (2:4). Specifically, it represents the number of standard deviations of leadtime demand that will be available to support customers during the reorder cycle. Per AFM 67-1, Volume II, Part Two, a standard deviation of one is used to compute safety levels in Base Supply. However, exceptions to this rule may be authorized by HQ USAF/LEYS (6:19-24).

A statistical rule of thumb, which can be applied to a demand distribution that is approximately normal, is useful in understanding how this C factor of one (1) translates into a customer service level of 84 percent. The rule of thumb is called the Empirical Rule and it says the following:

- a. Approximately 68% of the measurements (demands) will fall within one standard deviation of the mean.
- b. Approximately 95% of the measurements (demands) will fall within two standard deviations of the mean.
- c. Essentially all measurements (99.74 percent of demands) will fall within three standard deviations of the mean (21:105).

What this means is that a normal distribution of customer demands with plus or minus one standard deviation

will contain approximately 68 percent of all customer demands. This leaves 16 percent of the demands in each of the tails of the normal distribution which translates into a customer service level of 84 percent (29:413). In the same fashion, a normal distribution with plus or minus two standard deviations will contain approximately 95 percent of all customer demands. This leaves 2.5 percent of the demands in each of the tails, which translates into a customer service level of approximately 97.5 percent. Thus, by using a C factor of 1 (one standard deviation) Base Supply is able to satisfy approximately 84 percent of all possible demand occurrences.

An 84 percent service level implies that sixteen out of every 100 customer demands will not be satisfied. This sounds acceptable considering the great variability in Base Supply customer demands. But the critical issue to consider is the perception of those customers whose demands are not satisfied by Base Supply. Do they perceive Base Supply as an organization supportive of the customer?

It is important to note that the customer service objective currently in use by Base Supply is based almost exclusively on the level of service that can be achieved by inventory policies. Measures of customer support effectiveness include stockage effectiveness rates, bench stock fill rates, base service store and individual equipment unit fill rates, mission capable (MICAP) rates, etc. But no method exists to determine what factors affect

the customer's satisfaction and how to measure those factors.

Although AFM 67-1 requires Chiefs of Supply to designate highly experienced personnel to Supply/customer assistance teams "responsible for visiting activities to determine if customers are receiving quality support and where Supply support is not satisfactory," no clear rules exist to guide supply personnel in conducting these visits (6:2-3). Thus, it is very possible that the majority of these visits are done merely to fulfill a requirement rather than to determine what the customer needs or expects from Base Supply.

Indisputably, one of the main complaints voiced by Base Supply customers is that they cannot get the items they need when they need them. And unfortunately, Base Supply has had limited options at the local level to remedy this particular problem. Nevertheless, one of the objectives of this study was to identify opportunities for Base Supply to improve its level of customer satisfaction.

Specific Problem

Exploratory research showed that no formal studies have been conducted to measure the customer's perception of satisfaction with Base Supply in order to develop a customer service strategy. The management question which was the focus of this research was, "How is Base Supply meeting the needs and expectations of its customers?"

The specific objectives of the research were: 1) identify the service criteria important to the major customers of TAC Base Supply; 2) identify customer perceptions about the performance of TAC supply organizations; 3) measure the range of variation between customer segments; 4) identify opportunities available to Base Supply for improving customer satisfaction; and 5) provide a benchmark for future evaluations of Base Supply customer satisfaction.

Investigative Questions and Hypotheses

To meet the objectives of this research, Tactical Air Command (TAC) Base Supply customers were asked to rate the importance of 45 customer service criteria, and to rate the performance of Base Supply on those same criteria. The two ratings were then analyzed to determine any statistically significant differences between the two. The purpose of the analysis was to answer the following investigative questions:

1. What customer service criteria are most important to TAC Base Supply customers and how do they perceive the performance of Base Supply on those criteria they rate most important to their satisfaction?

2. Are TAC Base Supply organizations performing according to customers' expectations?

3. Are there differences in the perception of Base Supply's performance according to:

- a. Grade
- b. Years of Service
- c. Organizational Level
- d. Organization type
- e. Base of Assignment

To measure the range of variation that may exist in the perceptions of supply customers, respondents were segmented into the following categories:

<u>Grade groups:</u>	E1 - E3 E4 - E6 E7 - E9 O1 - O3 O4 - O6
<u>Years of service:</u>	Less than one year 1-5 years 6-10 years 11-15 years 16-20 years 21 or more years
<u>Organizational level:</u>	MAJCOM Headquarters Numbered Air Force Wing Squadron Branch Section
<u>Organization type:</u>	Maintenance Transportation Communications
<u>Base:</u>	All CONUS TAC bases.

The following hypotheses were formulated to facilitate quantitative analysis:

- a. To identify variations by rank:

H₀1a: There is no statistically significant difference between customer segments by grade in regards to their view of the importance of customer service elements.

H₀1b: There is no statistically significant difference between customer segments by grade in regards to their perception of Base Supply's performance.

b. To identify variations by years of service:

H₀2a: There is no statistically significant difference between customer segments by years of service in regards to their view of the importance of customer service elements.

H₀2b: There is no statistically significant difference between customer segments by years of service in regards to their perception of Base Supply's performance.

c. To identify variations by organizational level:

H₀3a: There is no statistically significant difference between customer segments by organizational level in regards to their view of the importance of customer service elements.

H₀3b: There is no statistically significant difference between customer segments by organizational level in regards to perception of Base Supply's performance.

d. To identify variations by organizational function:

H₀4a: There is no statistically significant difference between customer segments by organizational function in regards to their view of the importance of customer service elements.

H₀4b: There is no statistically significant difference between customer segments by organizational function in regards to their perception of Base Supply's performance.

e. To determine variations by base of assignment:

H₀5a: There is no statistically significant difference between customer segments by base of assignment in regards to their view of the importance of customer service elements.

H₀5b: There is no statistically significant difference between customer segments by base of assignment in regards to their perception of Base Supply's performance.

Scope and Limitations

Due to the limited time available for conducting this research, its scope was restricted to the external audit phase of a full customer service audit. The external audit was directed at identifying the customer service criteria relevant to the supply customer's satisfaction, and the evaluation of supply customer perceptions.

This research was also limited to investigating the perceptions of the major customers of Base Supply in the Tactical Air Command (TAC), with the exception of the two TAC overseas bases; Howard and Keflavic. Consequently, the results of this study only can be generalized to major customers served by domestic TAC Base Supply organizations.

Summary

In the private sector it has been clearly established that service is the new standard by which customers are measuring an organization's performance. Extensive research substantiated that excellence in customer service is not a competitive edge, it is the competitive edge (7:2). In regards to the applicability of customer service practices in the private sector to the Base Supply environment, it is important to recognize that in a government organization such as Base Supply the absence of a profit motive has a definite impact on its customer service orientation. While it could be argued that Base Supply has no real motive to keep its customers happy, the tremendous impact Base Supply

support has on the Air Force mission supports the need to develop specific strategies for customer satisfaction.

This thesis is organized in five chapters. In this chapter (I) a general introduction to the research topic was provided. In Chapter II a review of current literature in the customer service area and the research studies that provided the foundation background for this thesis is presented. In Chapter III the methodology used for this study is described. In Chapter IV the results of the data analysis are presented and discussed. In Chapter V a summary of the study and recommendations are provided.

II. Literature Review

Introduction

The objective of this review was to build a foundation from which to conduct this research effort. This chapter, divided in three sections, examines the current issues related to customer service as reflected in the literature. Section one briefly describes the customer service guidelines and recommendations most commonly found in the current literature. Section two describes studies conducted in the area of customer service by the leading experts in the field. These studies were reviewed to examine the research methods used, and to identify the customer service variables that could be incorporated into the survey instrument used in this study. Therefore, emphasis was given to the methodologies and the customer service models which have been proposed by the experts for measuring customer service and developing effective customer service programs. Section three describes two customer service studies conducted in Air Force Civil Engineering organizations. The criteria identified as most important to the satisfaction of Civil Engineering customers were reviewed to determine if they could be incorporated into this study.

Current Literature

The consumer surveys cited in Chapter I clearly demonstrated that the majority of American consumers were more interested in quality and service than in price. Customers not only expected good quality and service, they demanded them. It is not surprising, then, that the companies identified as successful in this intensely competitive market were those that provided unparalleled quality and service. But the point emphasized by the literature was that achieving an unparalleled level of service does not happen by chance. All companies identified as successful by the literature worked diligently at satisfying their customers. They had a clear strategy for the quality of customer service they provided. Most important, these companies followed specific guidelines.

In order to provide Base Supply organizations with specific information that will allow them to develop a customer service strategy, the strategies which have proven successful in the private sector, are briefly discussed in this section. These strategies are: 1) Involve the whole organization; 2) Develop specific guidelines for customer service; 3) Segment the customer base; and 4) Measure the service being provided.

Involve The Whole Organization. A commitment to customer service must permeate the whole organization because every level of the organization plays a key role in providing excellence customer service. In this regard, the

experts emphasized that senior management must start the whole process by making a commitment to service quality, communicating this commitment to all employees, and keeping the organization focused on the goal of providing excellent customer service (26:47). Some experts went even further by pointing out that it is not enough to have a customer service strategy that focuses only on treating the customer right. They believed that if a customer strategy is to succeed organization managers must treat their employees the way they want the employees to treat the customers. According to these experts, if employees are satisfied with the work environment, they are more likely to be cooperative with co-workers and customers (4:11). Desatnik emphasized this viewpoint by stating that "Managing an organization's human resources equates with managing its customer services. To put it another way, employee relations equals customer relations. The two are inseparable" (7:15). The author's view is that, in regard to Base Supply, the importance of focusing both on the customer and the employee cannot be emphasized enough. The morale of Base Supply personnel undoubtedly reflects itself on their attitude towards customers. If supply managers want supply personnel to demonstrate a commitment to customer service, managers must demonstrate their own commitment to the well being of their personnel.

Develop Specific Guidelines for Customer Service.

Experts agreed that employees must have specific guidelines

for delivering service to the company's customers. It is not enough to tell employees to be nice and smile. Employees should be trained on how to treat the customer (10:12). This recommendation is particularly important for the front-line workers in Base Supply who deliver service on a day to day basis. These front-line workers communicate loud and clear Base Supply's commitment, or the lack thereof, to the customer's satisfaction.

Many recommendations were found in the literature in regard to guidelines that employees can follow to service customers, but the most comprehensive set of guidelines which are particularly appropriate for the Base Supply environment are presented in Table 1.

Segment The Customer Base. Not all customers should be given the same level of service. This is important because all customers do not have the same needs or expectations, and if a company tries to stretch its resources to satisfy all customers, it might end up providing mediocre service to all customers. People Express served as an example of the futility of this approach. People Express tried to provide the same level of service to budget and business travelers. However, while budget travelers were willing to put up with the inconvenience of long check-in lines and delayed flights, business travelers expected fast check-in service and on-time departures. People Express did not segment its customer base and, therefore, it failed to establish a clear strategy for satisfying their needs and expectations. This

resulted in dissatisfied customers taking their business elsewhere (5:80).

Table 1

Guidelines For Customer Service

Meet the customer's needs.

Reduce the time it takes for the customer to complete his transaction.

Reduce the number of contacts the customer needs to make to get his question answered or a problem resolved.

Tell the customer precisely what he needs to know to get a problem resolved.

Bridge the language gap. Do not use company jargon the customer does not understand.

Do not make the customer feel like a nuisance.

Never make the customer feel at fault.

Never embarrass the customer.

Optimize the use of automated equipment and personal attention.

Make line management accountable for service quality.

Include quality of service as part of employee job performance criteria.

Adapted from Garfein (10:12)

According to Davidow, it is important that a company segment its customers based on the services they need and their willingness to pay for the service. He emphasizes that,

Only after a company has segmented its customers and chosen which ones to serve can it figure out where to substitute low-touch (service) for high, thus improving productivity without imperiling customer satisfaction. (5:80)

The idea of segmenting customer service is very applicable to Base Supply because not all its customers require the same level of service. Some organizations, by virtue of their critical mission, require a stronger level of service. By concentrating its customer service efforts on satisfying its major customers, Base Supply would not overstretch its resources, and it could satisfy the majority of its customers.

Measure The Service Being Provided. To ensure a company is meeting its customer service objective, it must have a way of measuring the level of service it is providing to its customers. Both external and internal measurements are needed to get a balanced picture of how the company is doing (19:178).

Stock and Lambert advocated external and internal measurements and proposed that the best way to accomplish this is with a customer service audit. An external customer audit would aim to identify what type of service the customer expects and how the customer perceives the service being provided by the organization (29:132). The internal audit, on the other hand, would evaluate the organization's current service practices and determine if they are consistent with customer expectations (29:137). Top management could then use this information to evaluate its

customer service strategy and make the necessary adjustments to customer service standards. These adjustments, however, must be consistent with customer needs (29:141). For this study, an external customer audit was conducted to identify the customers' needs and evaluate their perception of the service being provided by Base Supply.

Customer Service Studies In The Private Sector

This section reviews a number of studies that were conducted in the area of customer service by some of the recognized leaders on the subject; namely, La Londe and Zinszer, Sterling and Lambert, and Lambert and Harrington. The objective of this review was to identify a methodology that could be used for the analysis of customer satisfaction in Base Supply, and to identify the customer service variables that could be incorporated to the survey instrument. Some similarities existed in the approach the recognized experts took on customer service. However, La Londe and Zinszer concentrated on defining and measuring customer service in order to develop and maintain an effective customer service strategy. Sterling and Lambert and Lambert and Harrington, on the other hand, concentrated on integrating customer service with the other components of the marketing mix, i.e. price, product, and promotion, and identifying the contribution of each of these components to the overall share of business achieved by a firm.

La Londe and Zinszer--1976. La Londe and Zinszer's study was conducted across industries and was exploratory in nature as the concept of customer service still lacked clear definition. Hence, one of the main objectives of their study was to determine how customer service was defined by the industries involved in the study.

La Londe and Zinszer's methodology consisted of four phases:

a. Concept Definition. First, a literature review was conducted to evaluate previous research and writings in the area of customer service. Second, field discussions were conducted to evaluate the perceptions of customer service, and develop and evaluate proposed questionnaires. Questionnaires were then pretested (16:9).

b. Data Collection. Data was collected through a series of three questionnaires. The purpose of this procedure was to gather data concerning the perceptions of the firm's customer service from three sources: the individual responsible for product distribution, individuals in other functional areas within the corporation, and the customer's view of customer service in comparison with that of the supplier corporation (16:10).

c. Data Analysis. The data were collected, edited, coded and tabulated using standard research procedures (La Londe:13).

d. Data Presentation. The findings were organized by questionnaire stage and by type of industry.

La Londe and Zinszer found that not all firms explicitly recognized a customer service activity or function. A large number of respondents described customer service as an activity such as order processing, handling of complaints, or troubleshooting. Some regarded customer service as synonymous with performance levels such as "95 percent in stock". La Londe and Zinszer claim that performance levels might represent internal targets, but they represent incomplete measures from the firm's point of view rather than the customer's point of view (16:2).

The following is a summary of the findings of La Londe and Zinszer's study (16:120-155):

a. Customer service perception and measurement was situational to specific industries.

b. Respondents typically evaluated the sales and advertising effort on the low side of the scale and service as a more important element.

c. There was a substantial variation in customer service perceptions between the Transportation and Public Warehousing industries.

d. Product availability was considered the most important element of customer service by all of the industries.

b. Order cycle time was an especially critical element in the Pharmaceutical industry and merchandising firms of consumer products.

c. Distribution system information was especially critical in the Food, Electrical, and Paper industries, and relatively unimportant for Manufacturers of Machine Tools.

Based on their research findings, La Londe and Zinszer proposed a general model for developing and evaluating a customer service program. The model consists of the following steps:

a. The customer service audit. The first part of this audit involves identifying those factors on which customers evaluate their suppliers. The second part involves focusing on competitive service levels. The third part involves focusing on the management information system support requirements. The objectives of this part of the audit are to determine the current levels of customer service within the firm; the type of reports dealing with customer service performance; and who in the firm receives the reports (16:179).

b. Establish customer service standards. Standards established should reflect the customer's point of view; provide an operational and objective measure of service performance; and provide management cues for corrective action (16:180).

c. Test Cost Sensitivity of Standards. The objective of this step is to determine the cost implications of different levels of performance. Conceptually, the higher the service level, the higher the price of providing and maintaining those service levels (16:186).

d. Implement Customer Service Standards. This step involves developing an explicit and operational customer service policy statement. According to La Londe and Zinszer,

Without a specific (customer service policy) written statement, other functional elements as well as different sections of the distribution function are free to interpret standards as they see fit. This may result in conflicting or contradictory standards and uncertainty in the organization as to the service goals of the firm. (16:191)

Another important component of this step involves thoroughly educating the individuals involved with customer service (16:192).

e. Develop A Reporting System. The firm must determine what information is needed; who needs the information; how often it is needed; and where the information can be obtained. The objective is to provide timely information to those accountable for the customer service strategy of the firm (16:193).

f. Performance Evaluation. This step involves comparing actual service performance to target performance levels. This allows managers to take appropriate corrective action where needed.

g. Periodic Review of Standards and Programs. The customer service standards should be reviewed periodically to adjust for any changes in customer needs, changes in the environment, changes within the firm, and changes in the information needs of management.

Sterling and Lambert--1987. Sterling and Lambert conducted a customer service study in one type of industry-- office systems and furniture. Their objective was to test a research methodology with respect to its ability to determine the marketing variables important to customers, and identify a customer service and marketing strategy (28:6). They set out to test the hypothesis that the "marketing mix components of product, price, promotion and physical distribution/customer service contribute equally to the levels of share of business that customers allocate to manufacturers" (28:6).

They followed a sequential methodology that, in their opinion, can be readily adapted to other industries. The methodology consisted of the following phases:

a. External Audit. This phase was used to identify the services that were important to customers and compile a list of meaningful questions for their questionnaire. For this purpose, personal interviews were conducted with intermediary and end users that purchased office systems and furniture products from all the major competitors in the industry. Questionnaires then were mailed to representative firms served by each major competitor in the industry (28:8).

b. Internal Audit. During this phase, the internal records of the industry competitors were audited to identify their existing levels of customer service. The objectives of this phase were: to identify how customer service

performance was being measured and reported to management; to identify those services that offered potential competitive advantages; and determine the potential impact that improvements in marketing services would have on overall market share (28:9).

c. Evaluation of Customer Perceptions. The objectives of this phase were to identify the top rated vendor for each of the service components evaluated by the respondents; identify the services for which no vendor was providing outstanding levels of performance, and those for which only satisfactory performance was being provided. Another objective of this phase was to identify those services being used by customers to differentiate between vendors (28:9).

d. Identification of Opportunities. This phase consisted of comparing and analyzing the relevant criteria identified during the first three phases of the study to determine a strategic marketing mix for the industry (28:9).

The variables used in their study were categorized by the following marketing mix components: product, price, promotion, and customer service. A total of 88 variables were used. Of these, one third represented customer service/physical distribution services.

The variables identified as most important to the customers of the office system and furniture industry are tabulated in descending order of importance in Table 2. These are the variables for which continued or improved

service by the manufacturers could lead to differential advantage and added share of business.

Table 2
Most Important Variables To Respondents
In The Office System and Furniture Industry

Variable	Marketing Mix Component
Ability of manufacturer to meet promised delivery date.	Physical distribution/ customer service.
Accuracy in filling orders.	Physical distribution/ customer service.
Overall manufacturing and design quality relative to price.	Product.
Competitiveness of price.	Price.
Advance notice on shipping delays.	Physical distribution/ customer service.
Timely response to requests for assistance from manufacturers representatives.	Promotion.
Action on customer service complaints.	Physical distribution/ customer service.
Order cycle consistency.	Physical distribution/ customer service.
Accuracy of manufacturer in forecasting estimated ship dates.	Physical distribution/ customer service.
Overall aesthetics and finish.	Product.
Nonobsolescence of products.	Product.
Manufacturer's willingness to accept returns of damaged product.	Physical distribution/ customer service.

Table 2 (Continued)

Variable	Marketing Mix Component
Length of promised lead time for quick ship orders.	Physical distribution/customer service.
Completeness of contract orders.	Physical distribution/customer service.
Completeness of quick ship orders.	Physical distribution/customer service.
Realistic, consistent pricing policy.	Price.

Source: Sterling and Lambert (28:22).

Sterling and Lambert's research revealed that several of the variables which respondents rated as very important (a mean score of 5.9 or more, on a scale of 1 to 7) received less than superior performance ratings from the respondents (a mean score of less than 7). The variables are shown in Table 3.

Based on their analysis, Sterling and Lambert concluded that the four components of the marketing mix did not contribute equally to the share of business allocated to vendors by end users. In fact, they found that product and physical distribution/customer service variables consistently contributed more to the share of the vendors' business and overall customer satisfaction. Most important, however, the physical distribution/customer variables appear to offer vendors the greatest opportunity for customer satisfaction. These variables represented 10 of

Table 3
Variables Ranked High In Importance
For Which No Vendors Were Perceived To Be
Providing Superior Service

Variable	Marketing Mix Component
Ability of manufacturer to meet promised delivery date.	Physical Distribution/ customer service.
Competitiveness of price.	Price
Advance notice on shipping delays.	Physical Distribution/ customer service.
Special pricing discounts available on contracts.	Price
Timely response to requests for assistance.	Promotion.
Accuracy of manufacturer to forecast estimated ship dates.	Physical Distribution/ customer service.
Ability to expedite/rush service on orders.	Physical Distribution/ customer service.
Adequate advance notice on price changes.	Price
Action on customer service complaints.	Physical Distribution/ customer service.

Source: Sterling and Lambert (28:24).

the 16 variables identified as most important by customers (see table 2); four of the eight variables identified as most important in determining the share of business given to each manufacturer; and four of the seven variables found to offer the greatest opportunity to gain a differential advantage in the market (28:1-29).

La Londe, Cooper and Noordewier--1988. The general objective of this study was to reexamine the field of customer service and the changes that had taken place in this area since the first industry-wide study conducted by La Londe and Zinszer in 1976. The focus of the study were eight industry groupings: Food and Related, Chemical and Plastics, Pharmaceutical and Health Care, Automotive, Paper, Electronic, Clothing/Textiles, and Merchandise. The main objectives of the research were to examine the following areas:

- a. The primary themes of the customer service literature during the past decade.
- b. The factors that had affected customer service during the past 10 years, and how they had affected it.
- c. Changes in the customer service baseline.
- d. Ways to integrate customer service into the strategic planning of the firm.
- e. The future role of customer service in the firm (17:2).

The methodology used for this study consisted of the following phases: 1) a review of customer service literature covering the period 1976-1986; 2) the design of questionnaires to collect pertinent data; 3) the development and execution of five case studies to illustrate "best practice" areas in customer service.

A notable finding of La Londe's study was the difference between how the respondents viewed customer

service in 1976 and how they viewed it in 1987. Whereas respondents in 1976 viewed customer service as a relatively narrow function or a performance standard, 1987 respondents viewed it as a process that cut across organizational functions inside the firm, and suppliers and customers outside the firm (17:5).

The significant findings of La Londe's study were the following:

a. Customer service had moved from a reactive to a proactive activity. That is, firms measured customer service to determine what level of service customers wanted.

b. Service performance expectations were evolving into a window of acceptable performance rather than a specific point, i.e. the range of an acceptable fill rate was 89 to 95 percent.

c. Information had become the key ingredient in providing effective customer service. This is because the majority of industries in the study had to respond to requests for order status information.

d. Changes in logistics systems such as Just-in-Time (JIT), Materials Requirement Planning (MRP), Distribution Resource Planning (DRP), etc. were driven by the customer

e. Contractual relationships between buyers and sellers, rather than transactional relationships, were becoming the dominant mode in many logistics systems.

f. Customer service was considered important by the respondents in general. But there were significant

differences among industries in regards to customer service practices and performance expectations. For example, customer service was considered the most important variable in the automotive industry but relatively unimportant in the pharmaceutical industry.

g. The scope of customer service had extended to the international arena as firms became involved in global markets.

h. Pressure from customers, competitors and new technology to maintain higher standards of customer service was expected to increase. The pressures were created by changes in logistics systems (JIT, MRP, DRP, etc.) (17:5-69).

Lambert and Harrington--1989. Lambert and Harrington replicated the methodology used by Sterling and Lambert in 1987 to evaluate whether their findings could be generalized to other industries. The study was conducted in the plastics industry to evaluate the customer service provided by vendors, and to identify appropriate customer service and marketing strategies (18:45-59).

The significant findings of this study were:

a. Customer service and product quality variables represented 75 percent of the variables rated most important by customers.

b. No vendor in the plastics industry was performing according to customer expectations on the 18 variables rated as most important by customers.

c. The common finding to both industries is that customer service variables are integral components of the marketing mix (18:45-59).

A comparison of the variables identified as important in both industries is presented in table 4. The variables are presented in the descending order of importance assessed by the customers in each industry. An asterisk denotes the variables common to both industries.

Table 4
Variables Rated Most Important
In The Office Systems and Plastics Industries

Office Systems And Furniture Industry	Plastics Industry
Ability to meet promised delivery date.*	Supplier's resins are of consistent quality.
Accuracy in filling order.*	Quality of sales force--honesty.
Overall manufacturing and design quality relative to price.*	Accuracy in filling orders.*
Competitiveness of price.*	Competitiveness of price.*
Advance notice on shipping delays.*	Processability of resin.
Timely response to requests for assistance from manufacturers representatives.*	Suppliers resins are of consistent color.
Action on customer service complaints.*	Consistent lead times (vendor consistently meets expected delivery date).*

Table 4 (Continued)

Office Systems And Furniture Industry	Plastics Industry
Order cycle consistency (small variability).	Ability to expedite emergency orders in a fast responsive manner.
Accuracy of manufacturer in forecasting estimated ship dates.*	Information provided when order is placed-- projected shipping date.*
Overall aesthetics and finish.	Advance notice on shipping delays.*
Nonobsolescence of products.	Adequate advance notice of price changes.
Manufacturers's willingness to accept returns of damaged products.	Overall quality of resin relative to price.*
Length of promised lead time for quick ship orders.*	Projected delivery date.
Completeness of contract orders.	Actions on complaints.*
Completeness of quick ship orders.	Length of promised lead times--in-stock products.*
Realistic, consistent pricing policy.	Quality of sales force-- prompt follow up.*
Overall demeanor of sales representatives.	Information provided when order is placed.

Source: Lambert and Harrington (18:50)

Lambert and Harrington concluded that by focusing on what is important to the customer, rather than focusing on the competition, a firm can develop an integrated marketing strategy and gain a differential advantage in the market

place. They also concluded that improved performance on the information related customer service variables could be achieved with a real-time logistics information system (18:58).

Customer Service Studies In Civil Engineering (CE)

Singel--1986. The research conducted by Singel examined Civil Engineering customer satisfaction in the Tactical Air Command. The representative sample of the population consisted of building managers and senior officers at eight TAC bases. The study identified five criteria which both building managers and senior officers rated as very important. These were the following:

- a. Notification of Delay (of work).
- b. Professionalism of the CE workforce.
- c. Completion of work in a timely manner.
- d. Clean-up upon work completion.
- e. Prompt, accurate information on work status.

In addition, Singel found that while civil engineering's response time and work quality were also identified as important by the respondents, they did not influence customer satisfaction. Instead, "attitude and professionalism of those providing the service and information about the civil engineering organization were factors related to customer satisfaction" (27:75)

Long--1986. Long's study concentrated on measuring Civil Engineering customer satisfaction at non-TAC Air Force

bases. Building managers and Base Civil Engineering (BCE) commanders from four major commands, SAC, MAC, ATC, and AFSC were selected for the survey.

The study identified the following criteria as very important to building managers:

- a. Competence
- b. Timeliness
- c. Commitment of the customer service representatives to doing a good job (a care about service).
- d. A degree of concern about customer problems.
- e. Support (20:48).

This study also identified a significant difference between building managers and BCE commanders in regard to their perception of the service provided by the Civil Engineering Customer Service Unit. On a scale of one to five, building managers showed a mean score of 3.383, while BCE commanders showed a slightly more favorable mean score of 3.786. The difference between the two was statistically significant at the .05 level of significance.

Summary

The purpose of this chapter was to provide a foundation for examining customer service in Base Supply. Three different areas were discussed. First, the strategies advocated by the popular and professional business literature for establishing customer service programs were presented. These were: involve the whole organization,

develop specific guidelines for customer service, segment the customer base, and measure the service being provided. Second, the formal approach to customer service studies taken by the leading experts in the field was reviewed. The foundation of the formal methodologies used by the experts was the external audit because, in their view, no internal performance measure can substitute for going directly to the customers to determine what is important to them, and to identify how they perceive the service being provided. Finally, the significant findings of customer service studies in Air Force Civil Engineering organizations were presented.

III. Methodology

The literature review provided the background for the methodology used in this study. This background was an important step for it was apparent at the onset of this study that, because of the numerous and diverse service functions provided by Base Supply, measuring customer satisfaction would be a complex task. Many internal performance measures of customer support effectiveness were found in use by Base Supply, such as stockage effectiveness, issue effectiveness, mission capable (MICAP) rates , etc. But measures of customer service effectiveness, those that represent the customer's point of view, were not available.

As pointed out in Chapter II, La Londe and Zinszer claimed that internal performance measures, such as "95 percent in stock," represent incomplete measures of customer service. Therefore, the drive behind this methodology was to identify those measures that represent the customer's point of view.

This chapter presents an explanation of the research methodology designed to identify those measures that customers use to evaluate the performance of Base Supply; and the steps followed to collect the data necessary to answer the investigative questions and hypotheses posed in chapter I. The target population is identified, and the methods used for analysis of the data are described.

Objectives

The specific objectives of the methodology designed for this study were as follows. First, to identify the service criteria that are important to the major customers of TAC Base Supply. Second, to identify the customers' perceptions about the performance of TAC supply organizations. Third, to measure the range of variation that may exist between customer segments, such as grade, years of service, organizational level, organizational function, and base of assignment. Fourth, to identify any opportunities available to Base Supply for improving customer satisfaction. And finally, to provide a benchmark for future evaluations of Base Supply customer satisfaction.

Identification of Population

In identifying the population for this study the author's intent was to survey military personnel who, by direct consequence of their military duties, interacted frequently with Base Supply and were familiar with its level of customer service; instead of those who made contact with Base Supply only sporadically. Although it was assumed the entire base population was supported by Base Supply, it could not be assumed that the entire population interacted directly with Base Supply. A more valid assumption was that every organization had a limited number of people who regularly conducted the majority of organizational transactions with Base Supply. It was assumed that the unit

commander and those designated to procure items from Base Supply were cognizant of how the level of service provided by Base Supply affected the mission of their organization. Additionally, it was assumed that every supply organization had major customers, those who accounted for the majority of Base Supply's business; and irregular customers, those who accounted for a small percentage of business. Based on this, the author attempted to do a census of the population defined as TAC Base Supply major customers located in the Continental United States (CONUS) according to the following conditions:

a. Major customers were defined as the top four organizations that accounted for the largest volume/frequency of transactions processed by Base Supply at each TAC installation in the Continental United States (CONUS).

b. The population was further defined to include the following military personnel from each of the top four customer organizations: the commander, or his equivalent; and four individuals who routinely interacted with Base Supply.

The population, then, consisted of five personnel from each of the four major customer organizations at each of the eighteen (18) TAC bases in the CONUS for a total population of 360. To identify the specific members in the population, HQ TAC/LGS requested each TAC Base Supply organization to identify four of its major customers. The content of the

message from HQ TAC/LGS to TAC Chiefs of Supply is presented in letter format in Appendix A.

Five surveys were mailed to the commanders of each major customer organization, or his/her equivalent, with instructions to answer one questionnaire and distribute the remaining four to their personnel who routinely interacted with Base Supply. A copy of the letter containing these instructions is presented in Appendix B.

Research Design

The research design used for this study was based on the methodologies advocated by the leading experts in the field of customer service. Specifically, the methodology tested by Sterling and Lambert was modified and adapted for this study. Sterling and Lambert's study concentrated on defining and measuring the importance of customer service either across industries or for a specific industry (28:1). Their methodology was tested again by Lambert and Harrington in a study that provided additional evidence of the significance of logistics/customer service within the marketing mix (18:44). Their proposed methodology consisted of the following sequential steps: (1) an external audit to determine the customer service variables relevant to the customer; (2) an internal audit to review the customer service practices of the company; (3) evaluation of customer perceptions; and (4) identification of the services that offer the best opportunity for improved market share and/or

profit improvement. A full discussion of this methodology is presented in Chapter II.

For the purposes of this research, a literature review was incorporated in the methodology to examine how customer service was measured and customer service levels established in the private sector. The methodology, then, consisted of two major steps:

- a. A literature review
- b. An external audit
 - (1) Evaluation of customer perceptions.
 - (2) Identification of opportunities.

The Literature Review. The basic objectives of the literature review were to gain insights into customer service in the private sector; examine how it was used to gain a competitive advantage in the market place; investigate how it was measured; and identify the customer service criteria that could be incorporated into the survey instrument used for this study.

External Audit. The first objective of this study was to identify the customer service factors important to Base Supply customers and compile meaningful questions for the questionnaire portion of the research. To that end, informal personal interviews were conducted with seven Base Supply customers at Wright-Patterson AFB and five AFIT students who were assigned to maintenance squadrons prior to AFIT. Personnel interviewed were selected on the basis of present or fairly recent routine interaction with at least

one section of Base Supply. A preliminary list of criteria was prepared to facilitate the interview. Approximately 17 questions were developed from these interviews.

Second, two AFIT theses on customer service in Base Civil Engineering organizations were reviewed (27; 20). Four questions which the authors found to be correlated to customer satisfaction were selected and modified for applicability to Base Supply customers. The remaining questions were derived from the literature sources reviewed (16; 28). In particular, customer satisfaction measures used by Sterling and Lambert, Stock and Lambert, and La Londe and Zinszer were modified for use in this study.

Pretest Of The Survey Instrument. A preliminary survey instrument was developed and pretested to verify its clarity and measure its reliability. The preliminary questionnaire contained six questions pertaining to demographic characteristics of the respondents, 35 questions pertaining to customer service, and three open-ended questions. The questionnaire was pretested among 15 AFIT students who were assigned to maintenance, transportation, and supply organizations prior to coming to AFIT. Five of these AFIT students came from TAC organizations.

A reliability test of the data collected by the pretest yielded reliability coefficients ranging from .62 to .90 which indicated the survey instrument provided a sound measure of the variables that it was designed to measure. However, the survey instrument was modified to further

enhance its precision based on the feedback provided by the AFIT survey respondents and faculty members who reviewed the questionnaire. Five questions that were identified as redundant were eliminated, and 11 new questions were added to the survey to enhance the measurement of information availability, order cycle, and responsiveness factors.

Design of Survey Instrument. After the pretest of the survey instrument, a definitive questionnaire was developed to collect the pertinent data. The questionnaire was divided into four parts:

PART A was designed to collect demographic data that would allow for meaningful analysis of differences in perception of the respondents. The specific data requested were pay grade, length of military service, base of assignment, and organizational level of the respondent; type of organization to which the respondent is assigned; and the section in Base Supply that the respondent primarily deals with.

PART B contained the criteria used to identify customer service activities and characteristics that customers perceived as important to their satisfaction. This part of the questionnaire asked respondents to rate, on a seven-point Likert scale, the importance he/she would assign to 45 different customer service practices or characteristics. The importance ratings allowed were:

1 and 2 = Not important

3, 4, 5 = Moderately important

6 and 7 = Very important

In addition, this part included two open-ended questions. The first question was designed to allow respondents to identify any additional customer service factors they considered important to their satisfaction with Base Supply. The second question invited respondents to explain the actions they normally take when Base Supply cannot provide an item when they need it. The purpose of this question was to identify whether customers tend to use the options available to them within the supply system, or whether they tend to circumvent the system, i.e. contact other bases or depot directly, instead of using supply channels.

PART C measured the customers' perception of Base Supply's performance on the same customer service criteria contained in PART B. Respondents were asked to rate, on a seven-point Likert scale, the performance rating he/she would give to Base Supply on the 45 customer service criteria whose importance he/she rated in PART B. The performance ratings allowed were:

1 and 2 = Poor

3, 4, 5 = Satisfactory

6 and 7 = Excellent

This part also allowed for open-ended responses and any additional comments respondents might wish to make in regard to their perceptions of Base Supply. Respondents were asked

to comment on anything they particularly liked or disliked about Base Supply; and comment on any experience with Base Supply which was particularly satisfying or dissatisfying.

PART D asked respondents to rank the customer service factors (composite variables) used in the questionnaire in order of importance. The ranking allowed was on a scale of one to seven, with one being the most important. The purpose of this ranking was to provide additional information in regard to investigative question number one, i.e. What customer service criteria are most important to TAC Base Supply customers?

Questionnaires were coded by base and organization prior to mailing in order to maintain an accurate count of respondents should a second mailing prove necessary. Because questionnaires were mailed to organization commanders, the anonymity of the respondents was assured.

The questionnaire and the cover letter explaining the purpose of the survey are presented in Appendix C.

Reliability of Survey Instrument. Reliability refers to the accuracy and precision of a measurement procedure (9:94). Accordingly, the purpose of evaluating the reliability of the survey instrument was to assess whether the measurements obtained with the questionnaire were free of random error. For this purpose, Cronbach's Coefficient Alpha was computed for each composite variable used in the questionnaire. A coefficient of at least .65 for any one

composite variable was considered an indication of adequate reliability (24).

Validity of Survey Instrument. The content and criterion-related validity of the questionnaire were evaluated to ascertain whether it provided adequate coverage of the customer service practices relevant to Base Supply. AFIT students and faculty members with a supply AFSC (64XX) were asked to review and assess the content validity of the questionnaire. In addition, AFIT faculty members with experience in the customer service field and/or opinion research methods reviewed the questionnaire to evaluate the appropriateness of the elements and measurement scale used. Moreover, the questionnaire was reviewed by the TAC Supply Directorate, HQ TAC/LGS, for content and relevance. Several modifications were made to the questionnaire as a result of these reviews. Based on these reviews, and a reliability measurement of .69 or higher for each composite variable, the author concluded that the instrument had a sound content and criterion-related validity.

Evaluation of Customer Perceptions: Comparison of Performance Ratings to Importance Ratings. The importance ratings collected in PART B of the questionnaire were compared to the performance evaluation data collected in PART C of the questionnaire. T-tests were used to evaluate any differences statistically.

Identification of Opportunities. The purpose of this step was to determine whether Base Supply was providing poor

service on criteria rated "very important" by supply customers, or excellent service on criteria rated "not important." For this purpose, the results of the comparison of performance ratings to accomplished in the previous step, evaluation of customer perceptions, were examined to determine any opportunities available to Base Supply for improved customer satisfaction.

Statistical Analysis

Survey responses were coded into a Statistical Package for The Social Sciences (SPSS-X) data set to conduct the following statistical analysis and hypothesis testing.

Data Analysis. To obtain an accurate description of the data gathered, histograms were constructed to illustrate the distribution of the data. In addition, frequency distributions and the three measures of central tendency (mean, median and mode) were calculated for each demographic and customer service criterion. The measures of central tendency were useful in locating the "center" of a relative frequency distribution. The mean is the average measurement in the data set; the mode is the measurement that occurs with greatest frequency; and the median is the middle number in the data set when the measurements are arranged in ascending (or descending) order (21:76-82). Given that the data for this study was large ($n=257$), the measures of central tendency provide useful information about the population.

The relationship between the composite variables used in this study was analyzed using the Pearson product-moment coefficient of correlation (r). Pearson's r is "a measure of the strength of the linear relationship between two variables" (21:514). A value of r near or equal to 0 implies little or no relationship between two variables; a value close to 1 or -1 implies a strong relationship between the two variables (21:515). The literature offered the following guidelines for interpretation of the relationship between variables (15:329):

<u>r</u>	<u>Strength of Relationship</u>
> .70	Very Strong
.50 - .69	Strong
.30 - .49	Moderate
.15 - .29	Weak
< .15	Not Much

These guidelines were used to analyze whether the composite variables were strongly related to each other. Because the composite variables were measuring different aspects of customer service, it was expected they would be strongly related to each other.

Multivariate Analysis. Analysis of Variance (ANOVA) tests and the Tukey-b procedure for multiple comparisons were used to test null hypotheses H_{01a} thru H_{05b} . The ANOVA procedure "examines the variability in the sample and, based on the variability, it determines whether there is reason to believe the population means are equal" (22:257) The

conclusion that can be drawn from this procedure, however, is only whether a statistically significant difference exists between two or more groups. To investigate what groups differ and by how much, the Tukey-b multiple comparison test was used. This procedure identifies what pairs of groups are different at the .05 level of significance (22:263).

T-tests were used to identify any significant differences between importance and performance ratings. The t-test identifies whether a difference is large enough to represent a true difference between the groups rather than the result of random score fluctuations (21:387).

Assumptions. The assumptions made in order to use the procedures described above were as follows:

- a. Observations were sampled from a normal distribution.
- b. The groups have equal variances.
- c. Observations are independent. That is, the measurement of one item cannot affect the measurement of another item (21:120).

It is important to note that because the data needed to represent observations from a normal distribution, the measurements had to be interval or ratio. The data measurements collected for this study, however, were ordinal. According to Emory, there is no consensus among behavioral science researchers on whether parametric significance tests, such as the ANOVA, Tukey's test, and Regression Analysis are appropriate with ordinal measures. Strong arguments have been offered by researchers in defense

of both parametric and nonparametric tests. But he notes that "parametric tests are so versatile, accepted, and understood that they will continue to be used with ordinal data when they seem to approach interval scales in nature" (9:90). Since a Likert scale was used for this study, and the intervals between the scale responses were of equal value, the assumption made was that the data collected by the survey instrument could be treated as interval data.

Summary

This chapter presented the specific steps of the research methodology developed for this study. The population was identified and defined; and the method used to develop the survey instrument was discussed. The methods used to analyze the data were described. Univariate analysis was used to describe the data and its distribution. Bivariate analysis was used to test for relationships or significant differences among the variables. The results of this analysis are presented in Chapter IV.

IV. Results

This chapter describes the results of the analysis of the data collected. The results are presented as follows. First, the survey response rate is examined. Second, the reliability of the survey instrument is presented. Third, the results of the univariate analysis are discussed. This includes a description of the demographic characteristics of the respondents by grade, years of service, base of assignment, organizational level, and organizational function. Fourth, the results of the bivariate and multivariate analysis of the data are presented in terms of the investigative questions and hypotheses posed for this study. Finally, the author's summary and analysis of the responses to each open-ended question are presented.

Survey Response Rate

As mentioned in Chapter III, the author attempted to do a census of the major customer population. To this end, a total of twenty questionnaires were mailed to each major customer organization of Base Supply at each of the 18 TAC CONUS bases for a total distribution of 360 questionnaires to all members in the population. The mailing resulted in the return of 266 responses which equated to a response rate of 73.9 percent. Of these, nine questionnaires were not usable because they were incomplete. Five of the questionnaires were completely blank, and the remaining four

were partially completed. This resulted in an effective sample of 257 respondents. Based on this sample size, the confidence in the results was determined to be 99.72 percent. This was calculated using the following formula:

$$n = \frac{N (z^2) \times p(1 - p)}{(N-1) (d^2) + [(z^2) \times p(1 - p)]} \quad (1)$$

where

n = sample size (257)
 N = population size (360)
 p = maximum sample size factor (.5)
 d = desired tolerance (.05)
 z = factor of assurance (the unknown)
 (12:12)

Reliability Test Results

As mentioned in Chapter III, the reliability test conducted after the pretest of the survey instrument generated Cronbach coefficients of reliability that ranged from .60 to .90 percent for each composite variable. The test conducted on the final survey data, however, yielded a reliability coefficient of only .44 percent for the composite variable "information availability." The deletion of any one question that made up this measure would not have improved the reliability coefficient. Therefore, this composite variable was deleted from the data. The remaining six composite variables were used to measure the importance customers placed on customer service factors (PART B of questionnaire), as well as their perception of Base Supply's performance (PART C of questionnaire). The reliability

coefficients yielded from the Cronbach's Alpha coefficient of reliability are presented in Table 5.

Table 5

Reliability Coefficients Of Composite Variables

Question Number	Variable Name	Cronbach's Alpha
<u>Importance Measurements:</u>		
7 thru 14	General Service	.69
19 thru 28	Demeanor of Supply Representatives	.86
29 thru 36	Order Processing	.82
37 thru 40	Order Cycle Time	.84
41 thru 45	Item Availability	.84
46 thru 51	Responsiveness	.83
<u>Performance Measurements:</u>		
1 thru 8	General Service	.85
13 thru 22	Demeanor of Supply Representatives	.95
23 thru 30	Order Processing	.83
31 thru 34	Order Cycle Time	.75
35 thru 39	Item Availability	.80
40 thru 45	Responsiveness	.86

Univariate Analysis

Frequency distributions and histograms were constructed to illustrate the response distribution of each criterion used in this study; and measures of central

tendency were calculated to identify the "center" of the responses. These are presented in Appendix D. The frequency distributions constructed to describe the characteristics of the population sampled are discussed below.

Base Response Rate. The frequency distribution of the response rate per base is presented in Figure 1. This figure shows that of the 20 questionnaires mailed to each base, at least 10 were returned. Exactly half of the bases returned between 15 and 20 questionnaires. This equates to a response rate per base ranging from 50 to 100 percent.

Respondent Characteristics. The frequency distributions of the grade, years of military service, organizational level, and organizational function of the respondents, are presented in figures 2, 3, 4 and 5. Histograms illustrate the distributions.

Grade. Figure 2 shows the frequency distribution of the respondents by grade category. With 45.1 percent, enlisted personnel in the grade of E4 thru E6 represented the largest group of respondents. E7s thru E9s were the second largest group representing 24.5 percent of the respondents. Junior officers in the grade of O1 thru O3 were the third largest group represented accounting for 12.1 percent of the total.

BASE	VALUE	FREQUENCY	PERCENT	CUM PERCENT
Bergstrom AFB	1	10	3.9	3.9
Cannon AFB	2	10	3.9	7.8
Davis-Monthan AFB	3	12	4.7	12.5
England AFB	4	17	6.6	19.1
George AFB	5	18	7.0	26.1
Holloman AFB	6	16	6.2	32.3
Homestead AFB	7	16	6.2	38.5
Langley AFB	8	12	4.7	43.2
Luke AFB	9	17	6.6	49.8
MacDill AFB	10	13	5.1	54.9
Moody AFB	11	15	5.8	60.7
Mountain Home AFB	12	10	3.9	64.6
Myrtle Beach AFB	13	16	6.2	70.8
Nellis AFB	14	17	6.6	77.4
Seymour Johnson AFB	15	20	7.8	85.2
Shaw AFB	16	13	5.1	90.3
Tonopah Test Range	17	11	4.3	94.6
Tyndall AFB	18	14	5.4	100.0
TOTAL		257	100.0	

HISTOGRAM FREQUENCY

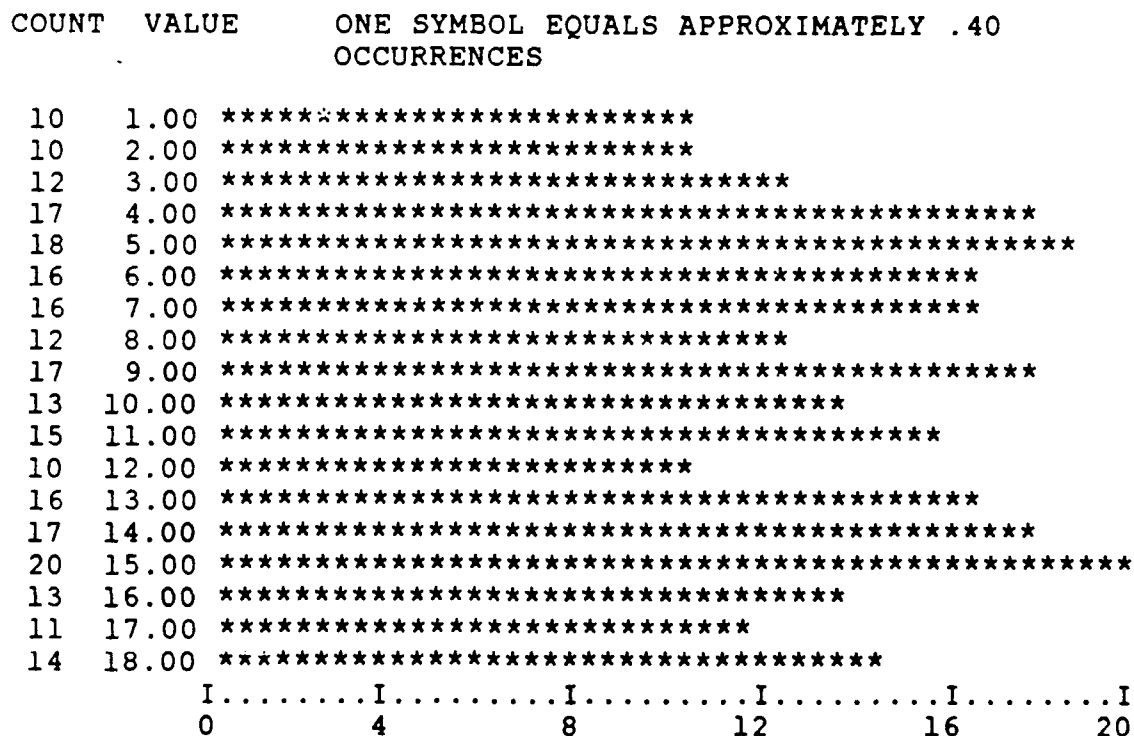


Figure 1. Frequency Distribution of Response Rate by Base.

GRADE	VALUE	FREQUENCY	PERCENT	CUM PERCENT
E1 - E3	1	17	6.6	6.6
E4 - E6	2	116	45.1	51.8
E7 - E9	3	63	24.5	76.3
01 - 03	4	31	12.1	88.3
04 - 06	5	21	8.2	96.5
OTHER*	6	9	3.5	100.0
TOTAL		257	100.0	

HISTOGRAM FREQUENCY

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY OCCURRENCES	4.00
17	1.00	****	
116	2.00	*****	
63	3.00	*****	
31	4.00	*****	
21	5.00	*****	
9	6.00	**	
I.....I.....I.....I.....I			
0 40 80 120 160			

* The nine respondents in the "other" category did not specify their grade.

Figure 2. Frequency Distribution of Grade of Respondents.

Years of Military Service. Figure 3 shows the frequency distribution of the respondents by years of service. From this figure it can be determined that 78.2 percent of the respondents had at least six years of military service which would indicate a significant level of Air Force experience. Based on this, it could be assumed that the respondents had at least an average level of experience in interacting with Base Supply.

Organizational Level. The frequency distribution for the organizational level of the population sample is shown in Figure 4. Respondents in the Squadron, Branch, and

Section level, which generally represent Base Supply's largest block of customers, comprised 78.9 percent of the respondents. Respondents in the Numbered Air Force category represent Headquarters (HQ) 12th Air Force, HQ 9th Air Force, and HQ 10th Air Force. Respondents in the "other" category included those assigned to Unified Command HQ, Joint Command HQ, Deputy Commander for Maintenance (DCM) staff, and Group HQ levels.

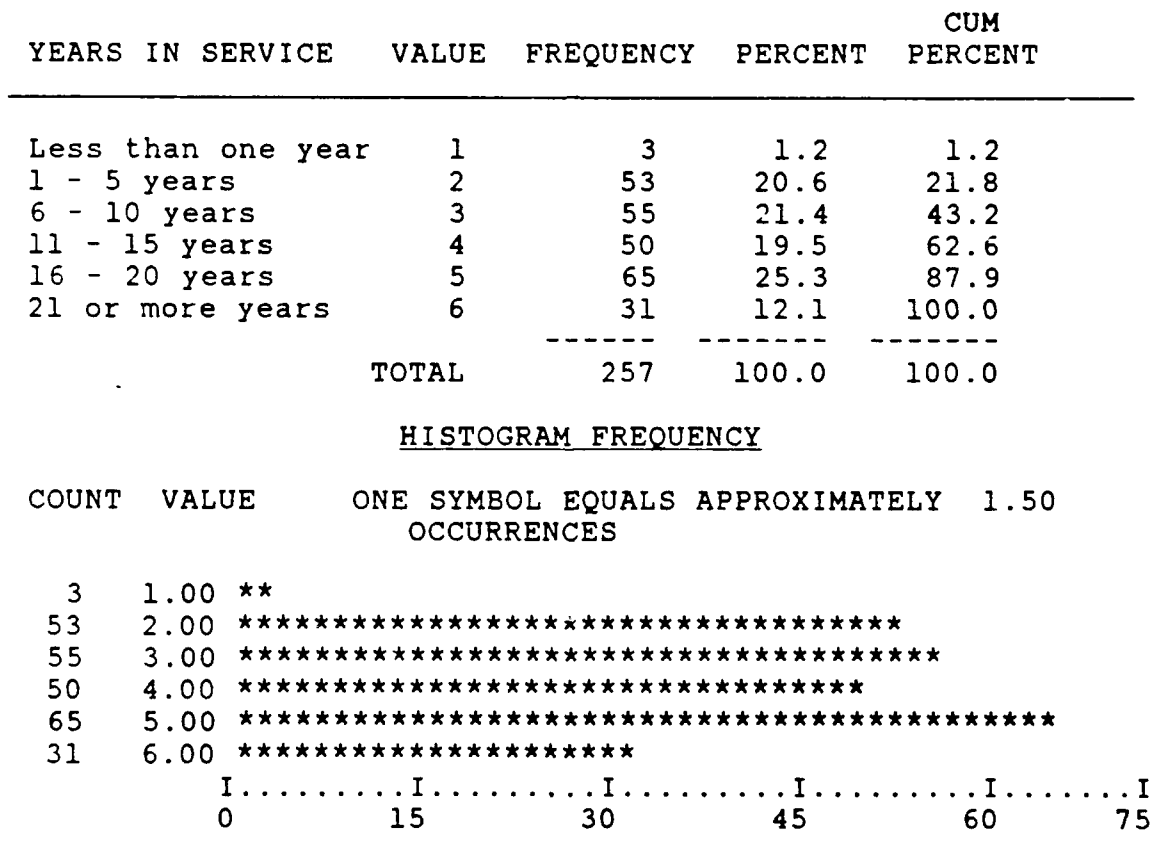


Figure 3. Frequency Distribution of Respondents Years of Service.

The organizations shown in Table 6 represent the major customers of TAC Base Supply. From this table it can be concluded that the major organizational customers of TAC Base Supply squadrons are maintenance organizations. The next largest major customer is represented by communications organizations followed by transportation organizations. The "other" category is comprised of various organizational functions; among these were: Civil Engineering, Security Police, Air Base Operability, Air Refueling squadrons, Combat Support Group organizations, the Air Force Engineering and Services Center (AFESC), the United States Central Command, and the US Special Operations Command.

Table 6
Composition Of Organizational Functions
in the Population

Organization	Population	Percent Of Total Population
Maintenance	205	56.9
Transportation	20	5.6
Communications	35	9.7
Other	100	27.8
Total	360	100.0

Figure 5 shows the percentage of responses received from each of the organizational functions represented in the population. Comparing these percentages to those in Table 6, it can be determined that the percentage of respondents

by organization type closely followed its representative percentage of the population.

The only possible exception to this observation applies to respondents from the "other" category of organizational functions. They constituted 17.3 percent of the total respondents versus 27.8 percent in the population. Because of the difference between the percentage of responses received and the percentage of representation in the population of this category, the results might be treated with some measure of caution in regards to "other" organizations.

ORGANIZATION TYPE	VALUE	FREQUENCY	PERCENT	CUM PERCENT
Maintenance	1	164	64.3	64.3
Transportation	2	17	6.7	71.0
Communications	3	30	11.8	82.7
Other	4	44	17.3	100.0
		2	Missing Responses	
		-----	-----	
	TOTAL	257	100.0	

HISTOGRAM FREQUENCY

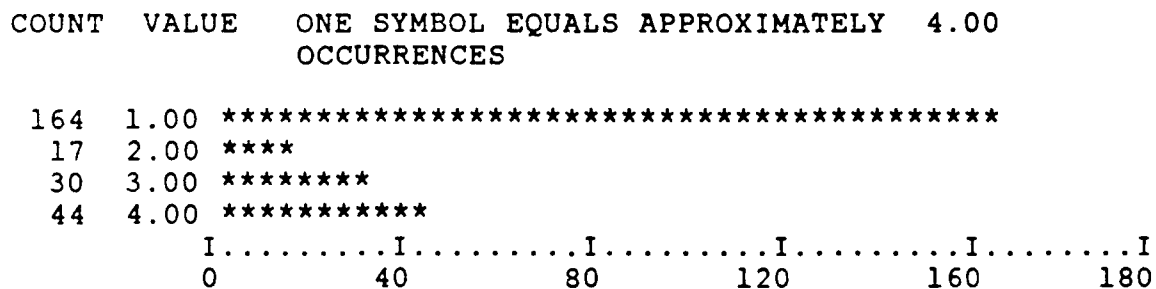


Figure 5. Frequency Distribution of Responses by Organizational Function.

Bivariate Analysis

The linear relationship among all the composite variables was analyzed using the Pearson product-moment coefficient of correlation. The results of the intercorrelations are shown in Table 7 and 8. Table 7 shows the correlations among the composite variables used to measure importance of customer service criteria in PART B of the questionnaire. The strongest correlations were between Order Cycle and Responsiveness (.6534); General Service and Demeanor of Supply Representatives (.6218); Item Availability and Responsiveness (.6005); Item Availability and Order Cycle (.5409); Order Processing and Responsiveness (.5335); Order Processing and Order Cycle (.5226); and Order Processing and Item Availability (.5036). A weak relationship existed between Order Cycle and General Service (.2712).

The Pearson coefficient of .50 or above between each pair of the composite variables mentioned above suggested there was a relationship between the respective values of the two variables. That is, if respondents rated one composite variable as very important, they were just as likely to rate the other composite variable as very important. The weak correlation between Order Cycle and General Service suggested that if respondents rated Order Cycle as very important, they were just as likely to rate General Service as either very important or not important (14:204).

Table 8 shows the correlation between the composite variables used to measure the performance of Base Supply in PART C of the questionnaire on the same variables used in PART B. From Table 8, it can be concluded that there was a strong correlation among all the variables. That is, if respondents rated supply's performance as excellent on one variable, they were just as likely to rate it excellent on another; similarly with rating the performance poor (14:204).

Table 7

Importance Measurements - Pearson Correlation
Coefficients for Composite Variables

	General Service	Demeanor of Supply Reps.	Order Process	Order Cycle	Item Availability	Responsiveness
General Service	1.0000					
Demeanor of Supply Reps	.6218	1.0000				
Order Process	.4724	.4189	1.0000			
Order Cycle	.2712	.3523	.5226	1.0000		
Item Ava.	.4344	.4245	.5036	.5409	1.0000	
Resp.	.4044	.3668	.5335	.6534	.6005	1.0000

Note: All values were significant at $p < .01$

It must be emphasized, however, that if two variables are strongly correlated, as is the case with several of the

variables in this study, one cannot infer a causal relationship. The only safe conclusion is that a linear relationship exists between the two. However, it does not imply that only a linear relationship exists between the two variables (21:516).

Table 8
Performance Measurements - Pearson Correlation
Coefficients for Composite Variables

	General Service	Demeanor of Supply Reps.	Order Process	Order Cycle	Item Availability	Responsiveness
General Service	1.0000					
Demeanor of Supply Reps	.8210	1.0000				
Order Process	.7302	.6150	1.0000			
Order Cycle	.7034	.6623	.8139	1.0000		
Item Ava.	.6364	.6333	.6765	.7212	1.0000	
Resp.	.6132	.6342	.6910	.6949	.6781	1.0000

Note: All values were significant at $p < .01$

Investigative Questions. The results of the bivariate and multivariate analyses conducted to answer the investigative questions are discussed below. The investigative questions will be addressed in the same order as they were presented in Chapter I.

Q1: What customer service criteria are most important to TAC Supply customers and how do they perceive the performance of Base Supply on those criteria they rate most important to their satisfaction?

The customer service criteria rated very important, those with a mean score of 6.0 or higher on a scale of 1 to 7, are presented in Table 9 in descending order of importance. A complete list of the importance ratings given to each of the 45 service criteria used in this survey is presented in Appendix E. Table 9 and the table in Appendix E provide a description of each criterion followed by its PART B question number in parenthesis. The standard deviation is included to provide information about the variability of the responses. Criteria marked as "Not used" by the respondents received no points.

From Table 9 it can be ascertained that the criteria rated most important, those with a mean score of 6.0 or above, are questions number 13, 14, 26, 22, 46, 23, 12, 25, 40, 47, 37, 8, 28, and 42.

Analysis of the data showed that no single criterion was rated as "not important" by the respondents. The lowest mean score, 4.46, went to question number 11 in the questionnaire. This question asked respondents to rate the importance of Base Supply's visits to their organization to ensure adequate support is being provided.

Table 9
Mean and Standard Deviation Scores of Criteria
Rated Very Important

Description	Variable	Mean	SD
A commitment to providing the best service possible. (13)	General Service	6.50	.73
A commitment to customer satisfaction. (14)	General Service	6.47	.76
Competence. (26)	Demeanor Of Supply Rep	6.41	.74
Ability to solve your problem. (22)	Demeanor of Supply Rep	6.40	.71
Ability to expedite MICAP requests. (46)	Responsiveness	6.35	.99
Fulfill promises made. (23)	Demeanor Of Supply Rep	6.28	.94
A good working relationship with your organization. (12)	General Service	6.24	.87
Professionalism. (25)	Demeanor Of Supply Rep	6.20	.84
Minimum variation between <u>required</u> and <u>actual</u> delivery dates on MICAP items. (40)	Order Cycle Time	6.22	1.15
Ability to expedite out of the ordinary MICAP requests. (47)	Responsiveness	6.18	1.04
Ability to meet required delivery times on <u>items</u> <u>available in stock</u> . (37)	Order Cycle Time	6.08	1.02

Table 9 (Continued)

Description	Variable	Mean	SD
A method for handling customer complaints. (8)	General Service	6.04	.94
A concern about your problem. (28)	Demeanor Of Supply Rep	6.04	1.01
Availability of bench stock items when needed. (42)	Item Availability	6.01	1.05

Further analysis of the data was conducted to determine how customers perceived the performance of Base Supply on those criteria they rated as most important to their satisfaction. The results are shown in Table 10.

Table 10 summarizes the performance ratings respondents gave to Base Supply on the criteria they rated very important. A complete list of the performance ratings given to each of the 45 service criteria used in this survey is presented in Appendix F. Table 10 and Appendix F provide a description of each criterion followed by its PART C question number in parenthesis. To ensure consistency, the criteria are presented in the same order as in Table 9. Appendix F presents the information in descending order of performance ratings.

From Table 10 it can be determined that none of the 14 criteria which the respondents judged as very important to

their satisfaction were given a below-satisfactory performance rating. However, none received an excellent rating.

The lowest mean score of all the criteria, 4.46, went to criterion number 11 in the questionnaire. This item measured the respondents' perception of supply's visits to their organization to ensure it is receiving adequate supply support. This criterion also shows the lowest mean score of importance (see Appendix E).

Table 10
Mean and Standard Deviation Scores
of Performance Ratings Given to Base Supply
on Criteria Rated as Very Important

Description	Variable	Mean	SD
A commitment to providing the best service possible. (13)	General Service	4.80	1.60
A commitment to customer satisfaction. (14)	General Service	4.69	1.65
Competence. (26)	Demeanor of Supply Rep	4.96	1.53
Ability to solve your problem. (22)	Demeanor of Supply Rep	4.91	1.54
Ability to expedite MICAP requests. (46)	Responsiveness	4.94	1.82
Fulfill promises made. (23)	Demeanor of Supply Rep	4.72	1.79
A good working relationship with your organization. (12)	General Service	4.99	1.54

Table 10 (Continued)

Description	Variable	Mean	SD
Professionalism. (25)	Demeanor of Supply Rep	5.23	1.34
Minimum variation between <u>required</u> and <u>actual</u> delivery dates on MICAP items. (40)	Order Cycle Time	4.21	2.04
Ability to expedite out of the ordinary MICAP requests. (47)	Responsiveness	4.60	1.92
Ability to meet required delivery times on <u>items</u> <u>available in stock</u> . (37)	Order Cycle Time	4.63	1.59
A method for handling customer complaints. (8)	General Service	4.71	1.58
A concern about your problem. (28)	Demeanor of Supply Rep	4.58	1.64
Availability of bench stock items when needed. (42)	Item Availability	4.35	1.72

Further analysis of the data shows that criteria numbers 13, 14 and 26 which were the top three rated as very important by the respondents showed the 13th, 18th and 8th highest mean scores respectively (see Appendix F). The criteria that showed the top satisfactory performance mean scores were, in descending order: accessibility of Base Service Store and Individual Equipment Unit; courtesy, military bearing, and appearance of supply representatives (see Appendix F).

Q2: Is TAC Base Supply performing according to customer's expectations?

The major customers of TAC Base Supply were asked to rate the importance of 45 customer service criteria in PART B of the questionnaire. Respondents were asked to evaluate the criteria based on the following scale:

Not Important		Moderately Important		Very Important
1 2	3 4 5	6 7		

In PART C of the questionnaire respondents were asked to rate the performance of Base Supply on the same 45 criteria whose importance he/she rated in PART B. Respondents were asked to rate supply's performance based on the following scale:

Poor	Satisfactory	Excellent
1 2	3 4 5	6 7

A series of t-tests were used to determine whether a difference between the mean score of importance and the mean score of performance ratings for each composite variable is large enough that we can conclude it represents a true difference rather than simply the result of random score fluctuations (21:431-436). Table 11 shows the results of the t-tests. This table compares the mean scores of importance and performance ratings for the composite variables. The mean, standard deviation, and the t statistic are shown. An asterisk (*) placed beside the t-value signifies that the difference between the importance

and performance ratings was large enough to be statistically significant. Table 11 shows that at the highly significant level of $p < .01$ there were significant differences between the importance supply customers place on the customer service composite variables, as constructed for this survey, and their perception of Base Supply's performance on the same variables.

Table 11
Comparison of Importance and Performance Ratings
for Customer Service Elements

Variable	<u>Importance</u>	<u>Performance</u>	t-value
	Mean/S.D.	Mean/S.D	
General Service	5.73/.62	4.73/1.16	12.55*
Demeanor of Supply Representatives	6.00/.63	4.94/1.25	12.72*
Order Processing	5.61/.81	4.56/1.29	8.70*
Order Cycle Time	6.00/.91	4.25/1.37	15.08*
Item Availability	5.61/.87	4.53/1.24	9.61*
Responsiveness	5.79/.88	4.54/1.39	11.50*

*Indicates a statistically significant difference at the $p < .01$ level.

A series of t-tests also were conducted to analyze any differences between importance and performance ratings for each of the 45 individual service criteria used in the questionnaire. At a significance level of $p < .05$, there were significant differences between the importance and

performance ratings on 44 out of the 45 criteria. Only one criterion showed no significant difference. This was question number 7 in the questionnaire which measured promptness in answering the telephone. The comparison of the importance and performance ratings for all 45 criteria is presented in Appendix G.

The significant differences found between importance and perceived performance identified above led to the conclusion that TAC Base Supply was not performing according to customers' expectations.

Q3: Are there differences in the perception of supply performance according to rank, years of service, organizational level, organization type, and base?

To examine this question, a oneway analysis of variance (ANOVA) was conducted to determine whether to reject or fail to reject the null hypotheses proposed in Chapter I. The basic premise of all the null hypotheses was that there is no statistically significant differences between the groups. The Tukey-b procedure was used to identify exactly which groups are significantly different at the .05 level of significance.

To provide a balanced picture of any differences between the customer segments, i.e., by rank, years of service, organizational level, organization type, and base, hypotheses were proposed to identify both the differences between the customer segments perceptions of the importance of customer service elements as well as differences in the

perceptions of Base Supply performance. Each hypothesis is addressed in the same order presented in Chapter I. For clarity and comparative purposes, the accompanying tables show the mean and standard deviation (SD) scores, and the minimum and maximum ratings given to the customer service element (also referred to as composite variable) by individual customer segments.

Null Hypothesis H₀1a: There is no statistically significant difference between customer segments by grade in regards to their view of the importance of customer service elements.

The results of the ANOVA and Tukey procedures are shown in Table 12. The results indicated a significant difference between groups on only two customer service elements: general service and demeanor of supply representatives. There is a significant difference between O1-O3s and O4-O6s in regards to their perception of the importance of GENERAL SERVICE. A significant difference also exists between O1-O3s and E4-E6s in regards to their perception of the importance of DEMEANOR OF SUPPLY REPRESENTATIVES. In both cases, the O1-O3 group rated the importance of the customer service elements lower than the other two groups.

Null Hypothesis H₀1b: There is no statistically significant difference between customer segments by grade in regards to their perception of Base Supply's performance.

No statistically significant differences were determined between customers in the grades of E1-E3, E4-E6, E7-F9, O1-O3, and O4-O6 in regards to their perception of

Base Supply's performance on any of the customer service elements.

Table 12

Importance Perceptions: Significant Differences
Between Customer Segments by Grade

Customer Service Element	Groups Significantly Different	MEAN	SD	MIN	MAX
General Service	01-03	5.52	.64	3.38	6.38
	04-06	6.09	.62	4.88	7.00
Demeanor Of Supply Representatives	01-03	5.74	.66	4.70	6.90
	E4-E6	6.10	.60	4.30	7.00

Note: Pairs of groups are significantly different at the .05 level of significance.

Null Hypothesis H_{2a}: There is no statistically significant difference between customer segments by years of military service in regards to their view of the importance of customer service elements.

The results of the ANOVA and Tukey-b procedures are presented in Table 13. The results indicated that there is a significant difference between customers with 6-10 years of military service and customers in the following groups: 1-5, 11-15, and 21 or more years of service. No significant differences exist between the groups with 1-5, 11-15, and 21 or more years of service. Customers with 6-10 years of service had a mean score response lower than the other three

groups and a greater variation in their assessment of the importance of RESPONSIVENESS.

Table 13

Importance Perceptions: Significant Differences Between Customer Segments by Years of Military Service

Customer Service Element	Groups Significantly Different	MEAN	SD	MIN	MAX
Responsiveness	1-5 years	5.84	.72	3.67	7.00
	*6-10 years	5.38	1.04	2.00	6.83
	11-15 years	5.89	.65	4.00	7.00
	21 or more years	6.12	.49	4.67	7.00

* This group was significantly different from the other groups at the .05 level of significance.

Null Hypothesis H₀2b: There is no statistically significant difference between customer segments by years of service in regards to their perception of Base Supply's performance.

No statistically significant differences were determined between customers with less than one, 1-5, 6-10, 11-15, 16-20, and 21 or more years of service in regards to their perception of Base Supply's performance on any of the customer service elements.

Null Hypothesis H₀3a: There is no statistically significant difference between customer segments by organizational level and their view of the importance of customer service elements.

Table 14 shows the results of the ANOVA and Tukey procedures. Results indicated there is a significant

difference between customers assigned to a Numbered Air Force and customers assigned to the following organizational levels: squadron, branch, section, and the "other" category. Numbered Air Force customers had a mean score response lower than the other four groups (4.90). No significant differences existed between customers assigned to a squadron, branch, section, or those in the "other" category.

Table 14

Importance Perceptions: Significant Differences Between Customer Segments by Organizational Level

Customer Service Element	Groups Significantly Different	MEAN	SD	MIN	MAX
Responsiveness	*Numbered AF	4.90	1.04	3.17	6.33
	Squadron	5.71	.79	2.00	7.00
	Branch	5.84	.73	2.00	7.00
	Section	5.91	.72	3.67	7.00
	Other	5.86	.70	4.67	7.00

* This group was significantly different from the other groups at the .05 level of significance.

Null Hypothesis H₀3b: There is no statistically significant differences between customer segments by organizational level and their perception of Base Supply's performance.

Table 15 shows that the ANOVA and Tukey procedures identified a significant difference between customers assigned to the branch level and those assigned to the section level. Those assigned to the branch level gave Base Supply the lowest performance ratings ranging from 0.00 to

6.33. The 0 rating was an option given to the respondents to indicate that, in their opinion, Base Supply does not provide a particular service.

Table 15

Performance Evaluation: Significant Differences
Between Customer Segments by Organizational Level

Customer Service Element	Groups Significantly Different	MEAN	SD	MIN	MAX
Responsiveness	Branch	4.02	1.47	0.00	6.33
	Section	4.97	1.33	1.67	7.00

Note: Groups are significantly different at the .05 level of significance.

Null Hypothesis H₀4a: There is no statistically significant difference between customer segments by organizational function and their view of the importance of customer service elements.

The ANOVA and Tukey procedure identified no statistically significant differences between customers assigned to Maintenance, Transportation, Communications, and "other" organizational functions.

Null Hypothesis H₀4b: There is no statistically significant difference between customer segments by organizational function and their perception of Base Supply's performance.

The results of the ANOVA and Tukey procedures are presented in Table 16. Results indicated there is a significant difference between respondents from maintenance and those in the "other" category in their evaluation of the

general service element. No statistically significant differences were identified between any other groups.

Null Hypothesis H₀5a: There is no statistically significant difference between customer segments by base of assignment in regards to their view of the importance of customer service elements.

The ANOVA and Tukey procedure identified no statistically significant differences by base of assignment.

Table 16

Performance Evaluation: Significant Differences
Between Customer Segments by Organizational Function

Customer Service Element	Groups Significantly Different	MEAN	SD	MIN	MAX
General Service	Maintenance	4.83	1.08	1.63	7.00
	Other	4.29	1.42	0.00	6.50

Note: Groups are significantly different at the .05 level of significance.

Null Hypothesis H₀5b: There is no statistically significant difference between customer segments by base of assignment in regards to their perception of Base Supply's performance.

Statistical analysis of this hypothesis identified no significant differences between customers by base of assignment.

Analysis of Open-Ended Questions

A total of five open-ended questions were included in the survey instrument to allow respondents to freely express their opinions or perceptions. The responses were analyzed

by the organizational function of the respondents, i.e. maintenance, transportation, communications, and other, to identify any possible trends in the opinions of each of these organizational functions. However, no significant differences were apparent to the author. Respondents from all organizations voiced similar concerns about the service criteria important to them and their perception of the source of satisfaction or dissatisfaction with Base Supply.

Following is a summary of the responses to each open-ended question provided in the same order as they appeared in the questionnaire.

PART B, Q1: Are there any other customer service factors you consider important to your satisfaction with Base Supply?
--

Roughly 50 percent of the respondents did not answer this question. About 20 percent of those who did respond indicated they could not think of any other factors or that everything that was important to them was already included in the questionnaire. The responses given by the remaining 30 percent of the respondents can be summarized as follows:

- a. Not giving the customer the runaround.
- b. Ability to work with the customer.
- c. A positive attitude towards the customer.
- d. Effective supply operations during computer downtime.
- e. More training for supply personnel on supply procedures. In this regard, many expressed a concern that

many supply personnel lack the knowledge they need to help the customer.

f. More effective training for personnel in the organizations Base Supply supports, i.e. equipment custodians, AMU personnel.

Selected responses which the author considered representative of the opinions expressed by the majority of those who answered this question were:

"It is important to me that Base supply work with the customer to ensure problems or concerns are being taken care of within a reasonable time frame. The customer should not be given the runaround or passed on from one section to another when either section is capable of handling the situation."

"A positive attitude towards customer service and the initiative to do what it takes, or to go the extra mile to keep the customer happy."

"Just knowing that if you need something done the person handling it knows what they are doing and has a genuine concern about doing it correctly."

"I believe it is very important for supply to be able to operate effectively during computer down time. I know there are procedures and products available to do this. Too often, however, it seems everything comes to a standstill when the computer is down."

"That each section of base supply would internally train each person to give out information consistent with that section's policies and requirements."

"Item 51 (see questionnaire in Appendix C) cannot be emphasized enough: to be very flexible in meeting unit needs on training. This should include training within the supported organization, i.e. AMU support section, to allow over the shoulder hands on training."

"Training programs more individually directed to each shop."

PART B Q2: What actions do you take when Base Supply cannot provide an item when you need it? (wait; increase the priority; submit a Supply Difficulty Report; contact other bases; contact the depot, etc.)

Roughly 60 percent of the respondents answered this question. Of these, only ten indicated they wait on supply. About 25 said they increased the priority and/or submitted a supply difficulty report. The remaining number indicated they did all of the above depending on the circumstances; but in particular, they indicated they contacted other bases and the item managers at the depot. It was noted that most of the personnel who answered this question were from maintenance organizations. Most responses were short and to the point i.e. contact other bases and call depot. A few examples of the responses which, in the author's opinion, cover the essence of what most of the respondents expressed are the following:

"In the case of MICAPs, contact other bases, as well as contact the depot IMs [item managers] to determine when replacements are going to become available."

"Increase priority, cann, supply difficulty; sometimes we [maintenance] do a much better (quicker) job of locating a part at depot or another base than MICAP."

"We do all our own depot follow-ups."

"All of the above and more. It should be noted that these actions have become the norm, not the exception. I have one supply person assigned and use 10 maintenance people to help accomplish the task of getting supplies. The offices at Base Supply are more of a road block than a help when it comes to dealing with off base agencies."

PART C, Q1: Please comment on anything you particularly like or do not like about Base Supply.

Approximately 75 percent of the respondents answered this question. Most of the positive or negative comments expressed by the respondents pertained to the demeanor of supply personnel. On the positive side, respondents frequently mentioned courtesy, prompt service, and the perception that supply personnel were there to support them. On the negative side, they frequently mentioned lack of competence, slow service, and a bad attitude.

Other than opinions about the demeanor of supply representatives, customers expressed their appreciation for prompt delivery of parts. On the negative side, there appeared to be a widespread dissatisfaction with bench stocks not filled on a timely basis, and poor communication of DD Form 1348-6 information to Contracting. Only sporadic comments were noted about excessive red tape to order items, and the base service store being out of products quite often.

Most of the responses, whether positive or negative, came from maintenance personnel. This is not surprising since they accounted for 64.3 percent of the respondents. Negative opinions outweighed the positive ones at approximately a 2 to 1 ratio. A representative sample of the responses follows.

a. What customers liked about their Base Supply:

"Outstanding courtesy and helpfulness by customer service representatives."

"The Chief of Supply is committed to providing his customers with excellent support. Supply is doing a fine job supporting a weapon system with fewer and fewer available spares."

"I get very good service from Base Supply, although they never have the item I need."

"I particularly like it when Base Supply is able to deliver an item in the time that corresponds to the priority."

"Senior leadership involvement from the Chief of Supply down to the airman."

b. What customers didn't like about their Base Supply:

"Don't like the fact that supply people seem to be overly specialized. Sometimes it seems the user has a broader understanding of the supply system than supply people themselves. Stock control will do only what pertains to them. Document control will do only what pertains to them, etc. Meanwhile, the poor customer has to explain the problem over and over, and sometimes actually tell supply people, how to fix it."

"Many times I get projected feelings that I, the customer, am an interruption to their work instead of the purpose of their work."

"When dealing with Supply on areas concerning support of the customer, I often receive more reasons why support cannot be provided rather than approaches to resolve the problem at hand."

"Slow, very slow service at supply point warehouse. no enthusiasm towards customers."

"Other than MICAP section, it appears that Base Supply is lacking in knowledge of their job. It seems everything you ask as far as follow-up action does not take place."

"Whenever an item is requested on a 2005 and 1348-6 for local purchase, the information (on the 1348-6) is often disregarded (point of contact, source of supply, address of supplier and phone number) or lost, even when stapled together. Base contracting is constantly calling and asking for additional information on an item that was provided on

the 1348-6. Bench stock often forgets to fill requested bins on orders that have many requisitions. Also some orders take 2 to 5 weeks to receive the property (not due outs)."

"Outside of MICAP, SSC & AGS Parts Store, the attitudes are bad and competence level is lacking."

"In Equipment Management mainly but also in other sections, too much time is spent telling people that they can't have something, instead of helping them get what they need. Also, the sections in Supply seem to fight too much among themselves, not wanting to help each other to help the customer."

"Bench Stock has too low of a priority and does not fill certain line items for six months at a time, which defeats its purpose."

"Bench stock not being checked on a regular basis."

PART C, Q2: Please comment on any experience with Base Supply which was particularly satisfying to you.

Approximately 75 percent of the respondents answered this question. Only five respondents answered this question by explicitly writing "none." All the other respondents had a positive experience to relate. Based on the author's interpretation of the responses, customers said little about satisfaction with any supply procedures, but much about their satisfaction with a particular service they have received from Base Supply personnel. In addition, the majority of positive comments were about personnel in MICAP; however, Customer Service, Equipment Management, and the Base Service Store were mentioned frequently. Other sections received sporadic comments.

Respondents appeared to be equally enthusiastic about basically the same thing: the perception that someone in

supply cared about their needs and was willing to "go the extra mile" for them.

In the author's opinion, the following responses were the most representative of the majority:

"Weekend/night phone calls at home on the status of high interest parts." (from a senior NCO in maintenance)

"MICAP controller seems to go out of his way to help us out even on non-micap items."

"Needed a particular item very recently. Depot said it would take at least 3 months. This was a mission essential item but could not be placed for MICAP. A customer service rep checked approximately 27 bases for this item for me, he found some to keep us going. I was very pleased and impressed. He did this within one day."

"Outstanding research facility. Great customer service, answer to your question right on the phone, go beyond normal procedures to help you in anyway they can. I can also say the same thing about MICAP. Answer any question, more than happy to help you with any problem whether it's a MICAP problem or not. Both Units are outstanding."

"MICAP goes out of their way to assist me in any way possible."

"Customer service personnel are very helpful although most of the time their hands are tied because of the problem being at depot or contracting."

"When problems arise, I turn to CLO, TSgt Manning. He has always given us his best support and has been courteous and sensitive to the needs of this unit's mission."

"As an equipment custodian for two different shops I have found the personnel in the Equipment Management section to be highly professional and knowledgeable of their jobs. I am also satisfied with the personnel working in storage and issue. (from an NCO in maintenance).

PART C. Q3: Please comment on anything which was particularly dissatisfying to you.

Approximately 75 percent of the respondents answered this question. Of these, approximately 15 indicated they

had had no bad experiences with Base Supply or that most experiences with supply were good ones. The remainder voiced the following sources of dissatisfaction:

a. Not receiving adequate service when the computer is down.

b. Bench stocks not filled on a timely basis.

c. Loss of DD 1348-6s or information contained therein not being forwarded to Contracting. Accordingly, some expressed the perception that Base Supply and Contracting do not work together.

d. Leaving messages on answering machines, especially when calls do not get returned.

e. Slow service and lack of experienced personnel.

Additionally, a few respondents expressed a concern about Demand Processing limiting the number of requisitions they will accept per hour.

The author considered the following responses as representative of the majority:

"Contracting and Supply not working together. Supply has all the information on the items requested (or ordered) and contracting does not. Contracting will call me for information or copy of the 1348-6."

"1348-6s have been lost too many times."

"I dislike talking into an answering machine, then not receiving a return call to discuss my problem."

"I often wait several minutes to be waited on, that in itself is okay, but when counter clerks are engaged in casual unofficial conversation, I find that disturbing. It doesn't happen often, but it has happened more than once."

"A particular moment when I went to a supply point warehouse. I was on a blue ball. Two people sat in their

office without bothering me to help me. I stood there for 15 minutes before someone from the back helped me. Then he was gone for 15 minutes before I finally got my part."

"Not filling bench stock when needed."

"Lack of competent and experienced personnel to handle problems."

Analysis Limitations

PART B of the questionnaire asked respondents to indicate what section of Base Supply they interacted with most frequently. The objective of this question was to determine whether their degree of satisfaction with Base Supply was based on the service they received from a particular area of supply. However, because more than 50 percent of the respondents marked more than one section on the questionnaire, any type of analysis was considered meaningless.

In addition, Part D of the questionnaire asked respondents to rank the customer service factors, or elements, in order of importance on a scale of one to seven, with one being the most important. However, there appeared to be some confusion about the instructions given. Approximately 25 percent of the respondents did not rank the customer service elements; about 10 percent used the same ranking more than once; and about 15 percent ranked only three or four of the elements. The rankings assigned to the customer service elements by approximately 50 percent of the respondents, however, were analyzed using a weighted value technique. Each time a customer service element was

selected as number one in importance, it was assigned seven points; if selected as second most important, it was assigned six points; if selected as third most important, it was assigned five points, etc., etc. The total number of points assigned to each element determined their ranking. Based on this technique, the elements were ranked in the following order of importance: Item Availability, Order Cycle, Responsiveness, Order Processing, General Service, Demeanor of Supply Representatives. However, in view of the circumstances explained above, it was concluded that the rankings were not very representative of the population.

Summary

This chapter described the survey response rate, the reliability of the survey instrument, and the results of univariate, bivariate and multivariate analysis of the data.

Each investigative question proposed for this study was discussed in the same sequence as presented in Chapter I. The customer service criteria rated very important by the respondents were presented along with the performance ratings given to these criteria by the respondents. Additionally, the results of the statistical tests used to test the null hypotheses were presented. Based on this analysis, the following statistically significant differences were identified:

a. Differences between customer segments by grade in their perception of the importance of GENERAL SERVICE and DEMEANOR OF SUPPLY REPRESENTATIVES.

b. Differences between customer segments by years of military service in their perception of the importance of RESPONSIVENESS.

c. Differences between customer segments by organizational level in their perception of the importance of RESPONSIVENESS.

d. Differences between customer segments by organizational level in their evaluation of Base Supply's performance on RESPONSIVENESS.

e. Differences between customer segments by organizational function in their evaluation of Base Supply's performance on GENERAL SERVICE.

In addition, significant differences were identified between the importance customers place on the customer service criteria used in this study and their perception of Base Supply's performance on those same criteria. The chapter concluded with the author's analysis of the open-ended responses.

Further analysis of the results, and the author's conclusions and recommendations are presented in Chapter V.

V. Analysis, Conclusions, and Recommendations

As stated in Chapter I and Chapter III, the specific objectives of the research were: 1) identify the service criteria important to the major customers of TAC Base Supply; 2) identify customer perceptions about the performance of TAC supply organizations; 3) measure the range of variation between customer segments; 4) identify opportunities available to Base Supply for improving customer satisfaction; and 5) provide a benchmark for future evaluations of Base Supply customer satisfaction. Hence, the purpose of this chapter is to highlight the significant findings of this research study. The analysis and conclusions concerning the investigative questions are presented, and the implications of the research methodology are discussed. Finally, recommendations and suggestions for further research are offered for the consideration of HQ TAC/LGS and others interested in this study.

Analysis And Conclusions

The background provided by customer service literature, the statistical analysis of the data collected, and the analysis of the open-ended responses led to the following conclusions regarding the investigative questions proposed for this study.

Investigative Question No. 1. What customer service criteria are most important to TAC Supply Customers?

Based on the analysis of the data collected, of the six customer composite variables used in this study order cycle time and demeanor of supply representatives were considered the most important (a mean score of 6.0 or higher) by all TAC Supply major customers. The importance supply customers placed on the demeanor of supply representatives reinforces the conclusions of consumer surveys. As mentioned in Chapter I, a 1988 Gallup Survey demonstrated the majority of customers equate high quality service with courtesy, promptness, and the perception that their needs are being satisfied (13:33-34). The importance of order cycle time is fairly consistent with La Londe and Zinszer's findings. As presented in the literature review, order cycle time was important across industries, but was an especially critical element in the Pharmaceutical and Merchandising firms of consumer products.

Analysis of all 45 service criteria used in the study revealed that 14 criteria were rated very important by the major customers. Of these, nine were consistent with the findings of the study across industries by La Londe and Zinszer, the study of the Office Systems and Furniture Industry by Sterling and Lambert, the study of the Plastics Industry by Lambert and Harrington, and the studies of Air Force Civil Engineering organizations by Long and Singel. A comparison of the very important criteria common to TAC Base

Supply, Civil Engineering, and industries in the private sector is presented in Table 17. While the wording of the criteria used in the study of TAC Base Supply is not exactly the same as that used in the other studies, the substance of the criteria is basically the same.

In addition to the criteria presented in Table 17, the following criteria, which had not been identified by previous studies, also were rated very important:

- a. A good working relationship with major customer organizations (question #12).
- b. A commitment to customer satisfaction (question #14).
- c. Ability of supply representatives to solve the customer's problem (question #22).
- d. Ability of supply representatives to fulfill promises made (question #23).
- e. Base Supply's responsiveness in expediting MICAP requests (question #46).

Summarizing the results, it was concluded that the service criteria most important to TAC supply major customers were as follows:

- a. A commitment on the part of Base Supply to provide the best service possible, to satisfy its customers, and to maintain a good working relationship with the organizations they support (questions #13, 14, and 12).

Table 17

Comparison of Criteria Found Very Important
In TAC Base Supply and Other Organizations Or Industries

TAC Base Supply	Other Studies	Organization or Industry
A commitment to providing the best service possible. (13)	Customer Service rep. commitment	Civil Engineering
Competence. (26)	Competence	Civil Engineering
Professionalism. (25)	Professionalism of CE workforce	Civil Engineering
Minimum variation between <u>required</u> and <u>actual</u> delivery dates on MICAP items. (40)	Minimum Variation between expected arrival date and actual arrival date.	Pharmaceutical and Consumer Products
Ability to expedite out of the ordinary MICAP requests. (47)	Ability to expedite emergency orders in a fast responsive manner.	Plastics
Ability to meet required delivery times on <u>items</u> <u>available in stock</u> . (37)	Order Cycle consistency (small variability)	Office Systems
A method for handling customer complaints. (8)	Action on customer service complaints	Furniture and Plastics
A concern about your problem. (28)	Concern	Civil Engineering
Availability of bench stock items when needed. (42)	Fill Rate	Across Industries

b. Supply personnel that are competent and professional; that show concern for customer problems and have the ability to work them out; and that fulfill any promises made to the customer (questions #22, 23, 25, 26, and #28).

c. Base Supply's responsiveness in expediting MICAP requests, and its ability to meet the customer's required delivery date on MICAP items, (question #40, #46, #47).

d. On-time delivery of supply items when available in stock (question #37).

e. Established procedures for handling supply customer complaints (question #8).

f. Bench stock availability (question #42).

The open-ended responses supported the finding that one of the most important criteria to the customer is the demeanor of supply representatives. The customers' impressions of Base Supply, whether favorable or unfavorable, appeared to be based on how they are treated by supply representatives. Those with favorable impressions were very enthusiastic in their praise for supply representatives who provided prompt service and demonstrated a genuine interest in the problems of individual customers. One satisfied customer expressed it thus:

Outstanding research facility. Great customer service. They answer your question right on the phone; they go beyond normal procedures to help you in anyway they can. I can also say the same thing about MICAP. They answer any question. They're more than happy to help you with any problem whether it is MICAP or not. Both units are outstanding.

None of the 14 criteria rated overall as very important by the respondents received a performance rating lower than 3 (on a seven point scale). This demonstrated customers perceived supply's performance as satisfactory on the criteria which they valued as very important. However, supply's performance was not perceived as excellent on any of the 14 criteria. It is interesting to note that a similar finding was made by Lambert and Harrington in their study of the Plastics Industry where no vendor in the industry was performing to customer expectations on the 18 variables that were rated most important. Lambert and Harrington attributed their finding to the business strategy of focusing on the competition instead of focusing on the customer (18:57). In Base Supply, it is conceivable that this finding was attributable to supply's focus on internal measures of performance rather than on the customer.

Investigative Question No. 2. Is TAC Base Supply performing in accordance with customer's expectations?

Analysis of the data showed a statistically significant difference between the importance and performance ratings for each of the six customer service composite variables. The magnitude of the difference between importance and performance ratings for the composite variables was punctuated by the fact that 44 out of the 45 criteria that comprised these variables also showed statistically significant differences. Figure 6 further illustrates the disparity between customer expectations, as specified by the

importance they place on the customer service composite variables, and customer evaluations of supply's performance. Based on these results, it was concluded that TAC Base Supply was not performing in accordance with customer expectations.

<u>Importance</u>			<u>Composite Variable</u>	<u>Performance</u>		
None	Moderate	High		Poor	Sat	Excellent
		*	Order Cycle		*	
		*	Demeanor Of Supply Representatives		*	
		*	General Service		*	
		*	Responsiveness		*	
		*	Item Availability		*	
		*	Order Processing		*	

Figure 6. Customer Service Analysis for TAC Base Supply.
Adapted from Sharman (25:76).

This finding was not very surprising given that the focus of Base Supply has been on the traditional supply performance measures which are internal. By meeting these performance standards, Base Supply management may assume it has fully met the needs of its customers. However, this study has shown that for the majority of customers this was not the case. The finding does not, however, necessarily imply that Base Supply fails to do an excellent job of

supporting its customers. But it does suggest that the majority of customers perceive significant shortfalls in Base Supply support.

The greatest disparities between importance and performance ratings were observed in the two composite variables that customers rated as most important: DEMEANOR OF SUPPLY REPRESENTATIVES and ORDER CYCLE. With regards to demeanor of supply representatives, both the statistical analysis and the open-ended responses strongly indicated the service provided by supply personnel is not meeting the expectations of supply major customers. This strongly suggests that internal measures of performance are not, by themselves, sufficient to meet customer expectations. Impressive stockage effectiveness rates or MICAP rates might not convince customers that supply is dedicated to customer service. But the behavior or attitudes of supply representatives will generally convey to customers a commitment to superior customer service, or the lack thereof.

The composite variable ORDER CYCLE accounted for the greatest significant difference between importance and performance ratings. The four questions that constituted this variable focused on the length of the order cycle for MICAP, local purchase items, items procured from depot, and items available in stock. Even though the statistical analysis demonstrated that customers perceived a significant shortfall in support of this area, the open-ended responses

suggested that the core of the problem was not in the length or variability of the order cycle inherent in the supply pipeline. Instead, it appeared that customers perceived supply personnel were not using the capabilities of the supply system to its fullest advantage. An example of this was illustrated by the following open-ended response:

I went MICAP on an item which was not available at the depot, but was available at [RAF] Bentwaters, England (per the Item Manager's report). MICAP would not go lateral. They said that they would wait for Bentwaters to call them (like Bentwaters knew we needed a lateral check).

Open-ended responses suggested that customers did not hold Base Supply responsible for the variation between required and actual delivery dates for depot-procured items. Customers appeared to understand the limitations confronted by Base Supply in procuring items they needed. An example of several responses that conveyed the customer's understanding of supply's limitations were the following: "Customer service personnel are very helpful although most of the time their hands are tied because of the problem being at depot or contracting." Another example was a customer's reference to a particularly satisfying experience with Base Supply: "The receipt of some long awaited MICAP items from depot. The lead time was of no fault of Base Supply; out of stock and no contract item at depot."

The responses suggested, however, that customers do hold Base Supply responsible for the expedient delivery of items available in stock. Further, in regards to the order

cycle for MICAP items, the responses suggested what customers find unacceptable is the perception that supply personnel are not doing everything possible to get the items customers need. This was well illustrated by the customers' responses to open-ended question number 2: What actions do you take when Base Supply cannot provide an item when you need it? The finding that the majority of respondents are circumventing supply channels by directly contacting other bases and depots suggests a lack of faith not in the system, but in supply personnel. By taking matters into their own hands, customers are communicating to supply that they perceive supply personnel are not aggressive enough in locating the part for them.

This finding highlights the need for a customer service policy that is not based on internal performance measures alone but one that includes measures reflecting the customer's expectations of service.

Investigative Question No. 3. Are there differences in the perception of supply performance according to rank, years of service, organizational level, organization type, and base?

The analysis of variance procedure revealed only two significant differences between groups in regards to their view of Base Supply's performance. There was a significant difference between customers that work at the branch level and those working at the section level in their perception of supply's performance on the composite variable RESPONSIVENESS. Customers at the branch level perceived

Base Supply's performance less favorably than those at the section level. An analysis of the individual criteria that made up this composite variable showed that the significant difference existed in the perception of the ability of Base Supply to handle out of the ordinary delivery requests. For this criterion, TAC branch personnel had a mean score of 3.74 with a standard deviation of 1.72 on a performance scale of one to seven. In contrast, section personnel showed a mean score of 4.75 with a standard deviation of 1.69. A possible explanation for this difference is that branch level personnel awareness of Base Supply's performance normally centers around problems, because issues that cannot be resolved at the section level are elevated to the branch as problems needing branch attention. Branch personnel are, in general, aware of more supply problems and, therefore, are more likely to perceive Base Supply's performance less positively than section personnel.

There was a significant difference between customers in Maintenance and the various organizations that fell in the "other" category in regards to their perception of Base Supply's performance on the composite variable GENERAL SERVICE. An analysis of the criteria that made up this variable revealed the existence of significant differences in the perception of two measures.

The first measure dealt with visits by supply to ensure adequate support is being provided to the organization. TAC Maintenance organizations showed a mean score performance

rating of 3.47 with a standard deviation of 1.80 and the various organizations in the "other" category showed a dramatically lower mean score of 2.61 with a standard deviation of 1.87. The relatively higher satisfaction of maintenance organizations could be attributed to more frequent supply visits, although neither group was overwhelmingly satisfied. As the principal customer (56.9 percent of the major-customer population), it follows that maintenance might receive more customer support visits from Base Supply than units with less mission impact. Besides the difference between the two groups, however, it was noted that all groups rated this measure poor to marginally satisfactory (2.61 to 3.60).

The second measure concerned a commitment by supply to provide the best possible service. Maintenance organizations showed a mean score of 5.04 with a standard deviation of 1.48 and the "other" category showed a mean score of 4.30 with a standard deviation of 1.81. The difference between the two groups could be attributed to the likelihood that TAC maintenance, because of the critical nature of their mission, received a more tailored level of service than the various organizations in the "other" category.

The underlying theme in the two criteria that comprised the composite variable GENERAL SERVICE was the interaction of Base Supply with its major customers. This common theme is a probable explanation for the significant difference in

perceptions of GENERAL SERVICE between customers in maintenance and the various "other" organizations. A more frequent interaction with base supply could lead to different perceptions of performance. Due to their crucial mission, maintenance organizations invariably interact more frequently with Base Supply.

Management Question. The management question which was the focus of this research was, "How is Base Supply meeting the needs and expectations of its customers?" Based on the findings for the three investigative questions posed for this study and the analysis of the open-ended responses, it was concluded that while customers perceived supply's performance as satisfactory, they also perceived significant shortfalls in Base Supply support.

Implications of the Research Methodology

The research methodology developed for this study made four significant contributions to conducting an external customer audit of Base Supply customers.

a. It provided service criteria which could be applied across all sections of Base Supply that provide direct service to customers.

b. It identified the criteria that are most important to the satisfaction of TAC major supply customers. These included 14 criteria used in the questionnaire plus 6 criteria identified by the open-ended responses. For

clarity, all the criteria have been compiled together and are shown in Table 18.

c. The questionnaire used in the study provided a tool for obtaining customer perceptions on the performance of Base Supply.

Table 18

Summary of Service Criteria Identified As Important
By TAC Base Supply Major Customers

General Service:

A commitment to providing the best service possible. (13)

A commitment to customer satisfaction. (14)

A good working relationship with your organization. (12)

A method for handling customer complaints. (8)

Demeanor of Supply Representatives:

Competence. (26)

Ability to solve the customer's problem. (22)

Fulfill promises made. (23)

Professionalism. (25)

A concern about your problem. (28)

Responsiveness:

Ability to expedite MICAP requests. (46)

Ability to expedite out of the ordinary MICAP requests. (47)

Order Cycle Time:

Minimum variation between required and actual delivery dates on MICAP items. (40)

Table 18 (Continued)

Ability to meet required delivery times on items available in stock. (37)

Item Availability:

Availability of bench stock items when needed. (42)

From Open-Ended Responses:

Not giving the customer the runaround.

Ability to work with the customer.

A positive attitude towards the customer.

Effective supply operations during computer downtime.

More training for supply personnel on supply procedures.

More effective training for personnel in the organizations Base Supply supports, i.e. equipment custodians, AMU personnel.

d. The identification of the criteria relevant to the major customers, and their perception of supply's performance provided HQ TAC/LGS information they could employ to adjust or change Base Supply customer service policy.

Although the methodology took a broad perspective of TAC Base Supply customer satisfaction, it was very useful in identifying customer perceptions. A more comprehensive list of criteria could be developed to examine customer satisfaction with specific work units in supply. But it should be emphasized that the list of criteria should be derived from personal interviews with the frequent customers of the work unit because there is no better way to identify

what is important to the customer than to ask the customer directly. Additionally, although the scope of this research was limited to the major CONUS customers of TAC Base Supply, the same methodology could be applied to examine the perceptions of a representative sample of the entire TAC supply customer population. Moreover, the same methodology could be applied to the major supply customers of other commands.

Recommendations

As stated in Chapter I, one of the specific objectives of this research was to identify what opportunities are available to Base Supply to improve customer satisfaction. Based on the findings, the following recommendations are offered.

a. Recommend that TAC Base Supply provide specific customer service standards for TAC supply personnel. It cannot be assumed that people intuitively know how to demonstrate courtesy, a positive attitude, etc. Personnel need to know how to communicate the desired or expected behavior to the customer. This, in turn, will communicate to the customer Base Supply's commitment to providing the best possible service. A starting point could be the adoption of the guidelines presented in Table 1, page 17. These guidelines cover most of the criteria major customers identified as important to their satisfaction with Base Supply.

b. Recommend that HQ TAC/LGS develop an explicit customer service policy statement for all TAC supply organizations. The need for this policy statement is seen by the leading experts as an integral component of an organization customer service strategy (16:191). Without a specific statement, each supply organization will interpret customer service as they see fit. Further, recommend that this statement, and the implied commitment of Base Supply to fulfill it, be disseminated to customers. An appropriate example of a policy statement is that of Federal Express. Their statement based on people, service, and profit, reads as follows:

Federal Express is committed to our PEOPLE-SERVICE-PROFIT philosophy. We will produce outstanding financial returns by providing totally, reliable, competitively superior global air-ground transportation of high priority goods and documents that require rapid, time certain delivery. Equally important, positive control of each package will be maintained utilizing real time electronic tracking and tracing systems. A complete record of each shipment and delivery will be presented with our request for payment. We will be helpful, courteous, and professional to each other and the public. We will strive to have a completely satisfied customer at the end of each transaction. (17:111)

c. Because the demeanor of supply representatives has been identified as very important to TAC Supply major customers, recommend supply organizations be more selective in choosing personnel assigned to positions requiring direct daily contact with customers. Personnel that are people-oriented, enthusiastic, courteous, and knowledgeable of supply procedures should be the norm in areas such as the

Customer Service Unit, MICAP, Demand Processing, Equipment Management, Base Service Store, Individual Equipment Unit, and Pick-Up and Delivery.

Traditionally, based on the author's experience, very little attention has been given to this area. In fact, the common practice has been to assign personnel just out of supply technical school to customer service positions simply because some of these positions are perceived as the best starting point for new supply personnel. The impact that the limited knowledge of these personnel has on customer perceptions of Base Supply normally has not been a consideration. However, since it is not always possible to reassign personnel, the best solution is offered in the next recommendation.

d. Develop an in-house customer service training program/seminar for supply personnel that will focus on teaching and reinforcing expected behavior toward customers. This training could be integrated into on-the-job training programs. Superior service organizations do not leave anything to chance; they train their employees to ensure they know exactly what conditions should exist if service superiority is to be achieved (8:26).

e. To improve the customer's perception of the order cycle for MICAP items, recommend that, in addition to the requirements established by supply regulations, each Base Supply develop specific standards that MICAP personnel will use for locating MICAP parts. These standards should

address such areas as: will lateral support be requested via phone or message? Will item managers be contacted via phone or message? How often will the customer be directly notified of actions taken? The standards must be attainable given the volume of business at a particular base. Further, these standards should be communicated to customers by posting them in MICAP offices and sending a copy to each major customer organization. The issue is to communicate to the major customers, in no uncertain terms, Base Supply's commitment to exhausting all possible alternatives to get the part they need.

f. In regards to the order cycle for items available in stock, it appears that customers might just have too high of an expectation on delivery times for these items. Recommend this area be examined to determine if supply is meeting the delivery time requirements set by supply regulations. If so, recommend customers be reeducated on these standards.

g. Since approximately 40 percent of maintenance customers expressed some dissatisfaction with the slow response they received from supply in filling bench stock, recommend the procedures used to respond to customer requests be examined. If the response times are what can be reasonably expected for bench stock items available from stock, then supply needs to lower bench stock customer expectations. To preclude customer dissatisfaction in this

area, suggest that a standard response time be established so that customers know exactly what to expect from supply.

h. Develop guidelines for handling customer service complaints. The customer should know who to go to get a complaint resolved; the supply representative's name should be posted where appropriate. The individual designated to handle all complaints for his (her) section or branch, should be aggressive in the treatment of those complaints and perform this task in an expeditious. Waiting for an answer, or never getting one, usually aggravates customers. Additionally, if the complaint will take a few days to research and resolve, a note to the customer letting him know someone is working on his problem will go a long way to making him (her) feel satisfied with Base Supply. A form letter could be useful for this purpose.

i. Since 30 percent of the respondents expressed dissatisfaction with supply personnel's level of knowledge, and another 30 percent indirectly addressed the issue, recommend more emphasis be directed toward on-the-job training. Specifically, management needs to determine whether training is actually taking place and how often. In this regard, supply personnel could, periodically, be allowed to work in different areas of supply for a week at a time. It is not very likely that this practice would have a deleterious effect on the effectiveness of supply; however, it would offer a triple benefit: 1) personnel knowledge of supply procedures will greatly increase; 2) the importance

of teamwork would be emphasized; and 3) personnel would see first hand how their work and mistakes affect others and, ultimately, the customer.

j. Since customer expectations have been identified by this research, the next logical step is to align Base Supply internal performance measurements with those expectations. However, if some customer expectations are too high, as it appears to be the case with the order cycle for items available in stock, then steps should be taken to lower those expectations by stating exactly what Base Supply can and cannot do for its major customers. The benefits of doing this are twofold: 1) Base Supply will build better relationships with its major customers; 2) customers might willingly adjust their expectations to supply policies without feeling alienated.

k. Stay in touch with the customer by periodically measuring the customer's perception of the service provided. For this purpose, the questionnaire used for this study could be used as is or modified to include other areas of interest to management.

Suggestions For Further Research

Based on the experience gained from this study, the following recommendations for further research are offered:

a. The external audit conducted for this study has identified the criteria relevant to TAC Base Supply major customers and how they perceive the service provided by Base

Supply. The next step of the process, as supported by the literature review, would be an internal audit. The audit would evaluate supply personnel perceptions of the service they provide. The information provided by the audit would allow TAC Base Supply to determine if its service orientation is consistent with customer expectations, and provide the basis for the development and implementation of customer service standards that reflect the customer's point of view.

b. As stated in Chapter I, this research was limited to the major customers of TAC Base Supply. Further research could focus on evaluating the perceptions of all TAC Base Supply customers using the same methodology.

c. The methodology used in this research could be replicated to evaluate customer perceptions in other commands and compare the results to those obtained by this study.

d. Future research could focus on evaluating customer perceptions of specific units of Base Supply, i.e. Demand Processing, MICAP, Stock Control, etc. The results would be used to set specific customer service standards for each of these units.

e. Once additional data has been gathered by the research studies recommended above, a future researcher could compile all the information and develop a customer service guide for supply personnel.

f. Future researchers who wish to use the survey instrument developed for this study are cautioned about the questions that comprised the composite variable INFORMATION AVAILABILITY. As mentioned in Chapter IV, the reliability of this composite variable was not considered adequate. The reliability of this measure should be improved before using it again.

In addition, an effort should be made to further improve the clarity of questions number 6 in PART A and the ranking of customer service factors in PART D of the questionnaire. As mentioned in Chapter IV, there appeared to be some confusion about the instructions given for these two questions.

Summary

The research identified the criteria important to TAC Base Supply major customers, and evaluated their perceptions of Base Supply's performance. The significant findings were highlighted to provide supply organizations the information needed to develop customer service strategies that reflect the customer's point of view.

It must be emphasized that this study evaluated customer expectations and perceptions at a point in time. To stay in touch with customer needs, customer service audits should be conducted periodically. TAC Base Supply then could use this information to continually improve

and reinforce its commitment to providing the best possible service.

This research provides a benchmark for evaluating Base Supply customer satisfaction. In conjunction with an internal audit, this research should prove valuable in developing specific customer service strategies that will lead to improved customer satisfaction, and to Base Supply being held in high esteem by its customers.

Appendix A: Survey Notification From HQ TAC/LGS
To Chiefs Of Supply

(Sent by message)

HQ TAC/LGS

Survey of Base Supply Customer Satisfaction

TAC Chiefs of Supply

1. As part of her thesis effort, Capt Esperanza Flores, a supply officer enrolled as a graduate student at the AFIT School of Systems and Logistics at Wright Patterson AFB has developed a survey to examine customer perceptions of service rendered by Base Supply. Customers will be asked to identify the service factors important to them, and to evaluate supply system performance on these factors.

2. The intent of the survey is not to identify the supply organizations that are doing a good or bad job at pleasing their customers. Rather, the intent is to identify what are "real" customer service needs, and potential gaps between customer expectations and perceived performance.

3. In order to conduct this survey, please identify four (4) of your major customers, by message, to Capt Flores, AFIT/LSG, Wright Patterson AFB, OH by 23 April. Major customers are those organizations that together account for your largest volume of transactions. The questionnaires will be mailed to these organizations approximately 15 May.

4. If you have any questions, feel free to contact Capt Flores at Autovon 785-4437, TELEFAX AV 785-8458.

HQ TAC/LGS

Appendix B: Example Of Letter Addressed To Commanders Of
Major Customer Organizations

AFIT/LSG (Capt Flores)

Base Supply Customer Satisfaction Survey

CC

1. HQ TAC/LGS is interested in determining how users evaluate the level of customer service provided by Base Supply. To obtain that information, they are asking their major users to respond to some general questions about the services and support provided by Base Supply organizations. Your organization was selected to participate in this survey because it was identified as a major customer of the 67th Base Supply Squadron. Therefore, your participation in this survey is very important.

2. Enclosed are five (5) questionnaires. Request your support in conducting this survey by filling out one questionnaire, and distributing the remaining four (4) to personnel in your organization that routinely deal directly (by phone or in person) with Base Supply. To account for differences in organizational levels, request you select one person from each of the following rank structures:

- a. E1 - E3
- b. E4 - E6
- c. E7 - E9
- d. O1 - O3

3. All responses to the questionnaires will be sent directly to me and aggregated for analysis. A pre-addressed envelope is included for each respondent for their convenience. Please encourage your personnel to answer the questionnaires carefully, and to return them within 10 days of receipt.

4. Thank you very much for your cooperation in conducting this survey. If you have any questions, please contact me at AV 785-4437.

ESPERANZA FLORES, Capt, USAF
AFIT Student

5 Atchs
Survey Packets

Appendix C: Survey Instrument



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS TACTICAL AIR COMMAND
LANGLEY AIR FORCE BASE VA 23065-

11 APR 1990

REF: TO
ATTN: OF

LGS

SUBJECT Customer Satisfaction

TO Base Supply Customer

1. The Tactical Air Command Base Supply organizations are committed to providing the best possible support and service to its customers. To that end, a graduate student at the Air Force Institute of Technology has prepared a questionnaire to obtain data concerning your assessment of the customer service provided by Base Supply. The results of this survey will be used to identify what aspects of customer service most impact your satisfaction with Base Supply.
2. The questionnaire is divided into four parts. PART A asks for demographic information, PART B asks you to identify service activities and characteristics you feel are most important, PART C asks you to rate the performance of Base Supply in the areas you identified as most important, and PART D asks you to rank the service factors in the order of importance to you.
3. Please be assured of absolute anonymity. Your name will not be identified in the use of this material. The purpose is not to identify individual responses, but to identify differences of perceptions within groups of customers.
4. A pre-addressed envelope is enclosed for your convenience. Please return your responses within 10 days of receipt.
5. Your response is important! Help us identify what Base Supply can do to serve you better. Thank you for your cooperation.

ROGER N. SEAGRAVE, Colonel, USAF
Deputy Director of Supply

1 Atch
Survey Packet

Readiness is our Profession

SURVEY OF CUSTOMER SATISFACTION WITH BASE SUPPLY

PART A: DEMOGRAPHIC FACTORS. This part of the questionnaire is designed to collect demographic factors that will be used to evaluate individual differences of the respondents. Please read each item carefully and circle the item that more accurately describes your present situation.

1. What is your pay grade?

- | | |
|------------|--------------------------|
| a. E1 - E3 | d. O1 - O3 |
| b. E4 - E6 | e. O4 - O6 |
| c. E7 - E9 | f. Other (specify) _____ |

2. How long have you been in the Air Force?

- a. Less than one year
- b. 1 - 5 years
- c. 6 - 10 years
- d. 11 - 15 years
- e. 16 - 20 years
- f. 21 or more years

3. To which base are you currently assigned?

- | | |
|----------------------|------------------------|
| a. Bergstrom AFB | j. MacDill AFB |
| b. Cannon AFB | k. Moody AFB |
| c. Davis-Monthan AFB | l. Mountain Home AFB |
| d. England AFB | m. Myrtle Beach AFB |
| e. George AFB | n. Nellis AFB |
| f. Holloman AFB | o. Seymour Johnson AFB |
| g. Homestead AFB | p. Shaw AFB |
| h. Langley AFB | q. Tonopah Test Range |
| i. Luke AFB | r. Tyndall AFB |

4. To which organizational level are you assigned? (Choose the level which best describes your current position, i.e., if you're a branch chief or assistant branch chief, check item e).

- | | |
|------------------------|--------------------------|
| a. MAJCOM Headquarters | e. Branch |
| b. Numbered Air Force | f. Section |
| c. Wing | g. Other (specify) _____ |
| d. Squadron | |

5. To which type of organization are you assigned?

- a. Maintenance
- b. Transportation
- c. Communications
- d. Other (specify) _____

6. What section in Base Supply do you primarily deal with in the accomplishment of your organizational mission?
(choose only one)

- a. Customer Service Unit
- b. Demand Processing
- c. Stock Control
- d. Equipment Management
- e. MICAP unit
- f. Base Service Store
- g. Shop Service Center
- h. AGS Part Store
- i. Materiel Control
- j. Other (specify) _____

PART B: IMPORTANCE OF CUSTOMER SERVICE FACTORS.

This part of the questionnaire is designed to collect data concerning the importance you place on the customer service factors listed below.

Section 1: Please indicate on a scale of 1 to 7 the number which best expresses the importance you place on each of the services or characteristics listed.

Example:	Check () If Not Used	IMPORTANCE								
		Not Important	1	2	Moderately Important	3	4	5	Very Important	6
Service Quality	_____	1	2	3	4	5	6	7		

A. GENERAL SERVICE

- 7. Promptness in answering the telephone _____ 1 2 3 4 5 6 7
- 8. A method for handling customer complaints. _____ 1 2 3 4 5 6 7
- 9. Accessibility to the NCOIC or OIC when needed to resolve a problem _____ 1 2 3 4 5 6 7

Example:	Check() If Not Used	IMPORTANCE						
		Not		Moderately			Very	
		Important	Important	Important	Important	Important	Important	
		1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

10. Accessibility of Base Service Store and Individual Equipment Unit..... _____ 1 2 3 4 5 6 7
11. Visits to your organization to ensure adequate support is being provided..... _____ 1 2 3 4 5 6 7
12. A good working relationship with your organization... _____ 1 2 3 4 5 6 7
13. A commitment to providing the best service possible..... _____ 1 2 3 4 5 6 7
14. A commitment to customer satisfaction..... _____ 1 2 3 4 5 6 7

B. INFORMATION AVAILABILITY

15. Availability of listings showing current status of requisitions..... _____ 1 2 3 4 5 6 7
16. MICAP status updates _____ 1 2 3 4 5 6 7
17. Advance notice on temporary closures of Base Service Store or the Individual Equipment Unit due to inventory.... _____ 1 2 3 4 5 6 7
18. Advance notice on changes to local procedures..... _____ 1 2 3 4 5 6 7

Example:	Check() If Not Used	IMPORTANCE						
		Not		Moderately			Very	
		Important	Important	Important	Important	Important	Important	
		1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

C. DEMEANOR OF SUPPLY REPRESENTATIVES

- | | | | | | | | | |
|--|-------|---|---|---|---|---|---|---|
| 19. Courtesy on the phone | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. Courtesy in person.. | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. Military bearing and appearance | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. Ability to solve your problem..... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Fulfill promises made | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. Ability to handle the customer's anger or frustration..... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. Professionalism ... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. Competence | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. An enthusiastic attitude..... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. A concern about your problem..... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

C. ORDER PROCESSING

- | | | | | | | | | |
|---|-------|---|---|---|---|---|---|---|
| 29. Ease and simplicity of order form (AF Form 2005, DD Form 1348-6)..... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. Time required to fill out order form..... | _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Example:	Check() If Not Used	IMPORTANCE						
		Not		Moderately			Very	
		Important	Important	Important	Important	Important	Important	Important
		1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

31. Assistance in searching for a part number or stock number....._____ 1 2 3 4 5 6 7
32. Availability of more than one phone line for placing orders..... _____ 1 2 3 4 5 6 7
33. Availability of remote order transmission (computer to computer order entry)..... _____ 1 2 3 4 5 6 7
34. No restriction on number of orders that can be placed over the phone..... _____ 1 2 3 4 5 6 7
35. Clear guidance on due in from maintenance (DIFM) procedures..... _____ 1 2 3 4 5 6 7
36. Clear guidance on local purchase procedures. _____ 1 2 3 4 5 6 7

D. ORDER CYCLE TIME (from order submission to delivery)

37. Ability to meet required delivery times on items available in base stock _____ 1 2 3 4 5 6 7
38. Minimum variation between projected and actual delivery dates on items procured from depot.. _____ 1 2 3 4 5 6 7
39. Ability to meet required delivery dat's on local purchase items..... _____ 1 2 3 4 5 6 7

Example:	Check() If Not Used	IMPORTANCE						
		Not		Moderately			Very	
		Important		Important			Important	
		1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

40. Minimum variation between
required and actual delivery
dates on MICAP items. _____ 1 2 3 4 5 6 7

E. ITEM AVAILABILITY

41. Fill rate on base level
stock items (% of orders
received complete
the first time)..... _____ 1 2 3 4 5 6 7
42. Availability of bench
stock items when
needed..... _____ 1 2 3 4 5 6 7
43. Availability of supply
point items when
needed..... _____ 1 2 3 4 5 6 7
44. Adequate stock of base
service store items.. _____ 1 2 3 4 5 6 7
45. Adequate stock of
individual equipment
items..... _____ 1 2 3 4 5 6 7

F. RESPONSIVENESS

46. Ability to expedite
MICAP requests..... _____ 1 2 3 4 5 6 7
47. Ability to expedite
out of the ordinary
MICAP requests..... _____ 1 2 3 4 5 6 7
48. Ability to expedite
non-micap requests
when necessary..... _____ 1 2 3 4 5 6 7

Example:	Check() If Not Used	IMPORTANCE						
		Not		Moderately			Very	
		Important	Important	Important	Important	Important	Important	
		1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

49. Ability to handle out of the ordinary delivery requests....._____ 1 2 3 4 5 6 7
50. Ability to expedite out of the ordinary local purchase requests.... _____ 1 2 3 4 5 6 7
51. Ability to provide training programs to suit the needs of your organization (DIFM management, equipment management, etc.)..... _____ 1 2 3 4 5 6 7

G. ADDITIONAL COMMENTS

1. Are there any other customer service factors you consider important to your satisfaction with Base Supply?

PLEASE TURN THE PAGE FOR THE CONTINUATION OF ADDITIONAL COMMENTS

2. What actions do you take when Base Supply cannot provide an item when you need it? (wait, increase the priority, submit a Supply Difficulty Report, contact other bases, contact the depot, etc.)

PART C: EVALUATION OF PERFORMANCE. This part of the questionnaire is designed to evaluate your perception of Base Supply's performance with respect to each of the factors listed in part B.

Example:	Does Not Provide	PERCEIVED PERFORMANCE						
		Poor		Satisfactory		Excellent		
	_____	1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

A. GENERAL SERVICE

1. Promptness in answering the telephone _____ 1 2 3 4 5 6 7
2. A method for handling customer complaints. _____ 1 2 3 4 5 6 7
3. Accessibility to the NCOIC or OIC when needed to resolve a problem _____ 1 2 3 4 5 6 7
4. Accessibility of Base Service Store and Individual Equipment Unit..... _____ 1 2 3 4 5 6 7
5. Visits to your organization to ensure adequate support is being provided..... _____ 1 2 3 4 5 6 7
6. A good working relationship with your organization... _____ 1 2 3 4 5 6 7
7. A commitment to providing the best service possible..... _____ 1 2 3 4 5 6 7
8. A commitment to customer satisfaction..... _____ 1 2 3 4 5 6 7

Example:	Does Not Provide	PERCEIVED PERFORMANCE						
		Poor		Satisfactory		Excellent		
	_____	1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

B. INFORMATION AVAILABILITY

9. Availability of listings showing current status of requisitions..... _____ 1 2 3 4 5 6 7
10. MICAP status updates _____ 1 2 3 4 5 6 7
11. Advance notice on temporary closures of Base Service Store or the Individual Equipment Unit due to inventory _____ 1 2 3 4 5 6 7
12. Advance notice on changes to local procedures..... _____ 1 2 3 4 5 6 7

C. DEMEANOR OF SUPPLY REPRESENTATIVES

13. Courtesy on the phone _____ 1 2 3 4 5 6 7
14. Courtesy in person.. _____ 1 2 3 4 5 6 7
15. Military bearing and appearance _____ 1 2 3 4 5 6 7
16. Ability to solve your problem..... _____ 1 2 3 4 5 6 7
17. Fulfill promises made _____ 1 2 3 4 5 6 7
18. Ability to handle the customer's anger or frustration..... _____ 1 2 3 4 5 6 7
19. Professionalism ... _____ 1 2 3 4 5 6 7
20. Competence _____ 1 2 3 4 5 6 7

Example:	Does Not Provide	PERCEIVED PERFORMANCE						
		Poor		Satisfactory		Excellent		
	_____	1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

21. An enthusiastic attitude..... _____ 1 2 3 4 5 6 7
22. A concern about your problem... _____ 1 2 3 4 5 6 7

C. ORDER PROCESSING

23. Ease and simplicity of order form (AF Form 2005, DD Form 1348-6)..... _____ 1 2 3 4 5 6 7
24. Time required to fill out order form..... _____ 1 2 3 4 5 6 7
25. Assistance in searching for a part number or stock number..... _____ 1 2 3 4 5 6 7
26. Availability of more than one phone line for placing orders..... _____ 1 2 3 4 5 6 7
27. Availability of remote order transmission (computer to computer order entry)..... _____ 1 2 3 4 5 6 7
28. No restriction on number of orders that can be placed over the phone..... _____ 1 2 3 4 5 6 7
29. Clear guidance on due in from maintenance (DIFM) procedures..... _____ 1 2 3 4 5 6 7
30. Clear guidance on local purchase procedures. _____ 1 2 3 4 5 6 7

Example:	Does Not Provide	PERCEIVED PERFORMANCE						
		Poor	Satisfactory			Excellent		
	_____	1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

D. ORDER CYCLE TIME (from order submission to delivery)

31. Ability to meet required delivery times on items available in base stock _____ 1 2 3 4 5 6 7
32. Minimum variation between projected and actual delivery dates on items procured from depot.. _____ 1 2 3 4 5 6 7
33. Ability to meet required delivery dates on local purchase items..... _____ 1 2 3 4 5 6 7
34. Minimum variation between required and actual delivery dates on MICAP items. _____ 1 2 3 4 5 6 7

E. ITEM AVAILABILITY

35. Fill rate on base level stock items (% of orders received complete the first time)..... _____ 1 2 3 4 5 6 7
36. Availability of bench stock items when needed..... _____ 1 2 3 4 5 6 7
37. Availability of supply point items when needed..... _____ 1 2 3 4 5 6 7
38. Adequate stock of base service store items.. _____ 1 2 3 4 5 6 7

Example:	Does Not Provide	PERCEIVED PERFORMANCE						
		Poor		Satisfactory		Excellent		
	_____	1	2	3	4	5	6	7
Service Quality	_____	1	2	3	4	5	6	7

39. Adequate stock of individual equipment items..... _____ 1 2 3 4 5 6 7

F. RESPONSIVENESS

40. Ability to expedite MICAP requests..... _____ 1 2 3 4 5 6 7
41. Ability to expedite out of the ordinary MICAP requests..... _____ 1 2 3 4 5 6 7
42. Ability to expedite non-micap requests when necessary..... _____ 1 2 3 4 5 6 7
43. Ability to handle out of the ordinary delivery requests..... _____ 1 2 3 4 5 6 7
44. Ability to expedite out of the ordinary local purchase requests.... _____ 1 2 3 4 5 6 7
45. Ability to provide training programs to suit the needs of your organization (DIFM management, equipment management, etc.)..... _____ 1 2 3 4 5 6 7

1. Please comment on anything you particularly like or don't like about Base Supply.

2. Please comment on any experience with Base Supply which was particularly satisfying to you.

3. Please comment on any experience with Base Supply which was particularly dissatisfying to you.

PART D: RANKING OF CUSTOMER SERVICE FACTORS

Please rank the service factors used in this questionnaire in the order of importance to you. Rank on a scale of 1 to 7 with 1 being the most important. Use each number only once.

- _____ GENERAL SERVICE
- _____ INFORMATION AVAILABILITY
- _____ DEMEANOR OF SUPPLY REPRESENTATIVES
- _____ ORDER PROCESSING
- _____ ORDER CYCLE TIME (from order submission
to delivery)
- _____ ITEM AVAILABILITY
- _____ RESPONSIVENESS

THANK YOU FOR PARTICIPATING IN THIS SURVEY

Please place your questionnaire in the envelope provided and send it through distribution.

Appendix D: Frequency Distributions And Histograms
Of Customer Service Criteria

MEASURES OF IMPORTANCE

(7) Promptness in answering the telephone

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	2	.8	.8	.8
Not Important	2	5	1.9	2.0	2.8
Moderately Important	3	20	7.8	8.0	10.8
Moderately Important	4	45	17.5	17.9	28.7
Moderately Important	5	80	31.1	31.9	60.6
Very Important	6	63	24.5	25.1	85.7
Very Important	7	36	14.0	14.3	100.0
	99	6	2.3	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
2	1.00	*
5	2.00	***
20	3.00	*****
45	4.00	*****
80	5.00	*****
63	6.00	*****
36	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.108	MEDIAN	5.000	MODE	5.000
STD DEV	1.275	MINIMUM	1.000	MAXIMUM	7.000

(8) A method for handling customer complaints.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	5	1.9	2.0	2.0
Moderately Important	4	12	4.7	4.8	6.9
Moderately Important	5	40	15.6	16.1	23.0
Very Important	6	103	40.1	41.5	64.5
Very Important	7	88	34.2	35.5	100.0
	99	9	3.5	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES
5	3.00	*
12	4.00	***
40	5.00	*****
103	6.00	*****
88	7.00	*****
I.....I.....I.....I.....I.....I		
	0	40 80 120 160 200

HISTOGRAM FREQUENCY

MEAN	6.036	MEDIAN	6.000	MODE	6.000
STD DEV	.945	MINIMUM	3.000	MAXIMUM	7.000

(9) Accessibility to the NCOIC or OIC when needed to resolve a problem.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	2	.8	.8	.8
Moderately Important	3	9	3.5	3.6	4.4
Moderately Important	4	17	6.6	6.9	11.3
Moderately Important	5	61	23.7	24.6	35.9
Very Important	6	86	33.5	34.7	70.6
Very Important	7	73	28.4	29.4	100.0
	99	9	3.5	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
2	2.00	*
9	3.00	*****
17	4.00	*****
61	5.00	*****
86	6.00	*****
73	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.770	MEDIAN	6.000	MODE	6.000
STD DEV	1.106	MINIMUM	2.000	MAXIMUM	7.000

(10) Accessibility of Base Service Store and Individual Equipment Unit.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	2	.8	.8	.8
Not Important	2	3	1.2	1.2	2.0
Moderately Important	3	21	8.2	8.4	10.4
Moderately Important	4	38	14.8	15.1	25.5
Moderately Important	5	88	34.2	35.1	60.6
Very Important	6	57	22.2	22.7	83.3
Very Important	7	42	16.3	16.7	100.0
	99	6	2.3	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
2	1.00	*
3	2.00	**
21	3.00	*****
38	4.00	*****
88	5.00	*****
57	6.00	*****
42	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.175	MEDIAN	5.000	MODE	5.000
STD DEV	1.262	MINIMUM	1.000	MAXIMUM	7.000

(11) Visits to your organization to ensure adequate support is being provided.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	10	3.9	4.1	4.1
Not Important	2	15	5.8	6.2	10.3
Moderately Important	3	42	16.3	17.3	27.6
Moderately Important	4	48	18.7	19.8	47.3
Moderately Important	5	63	24.5	25.9	73.3
Very Important	6	43	16.7	17.7	90.9
Very Important	7	22	8.6	9.1	100.0
	99	14	5.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

10	1.00	*****
15	2.00	*****
42	3.00	*****
48	4.00	*****
63	5.00	*****
43	6.00	*****
22	7.00	*****
I.....I.....I.....I.....I.....I		
0 15 30 45 60 75		

HISTOGRAM FREQUENCY

MEAN	4.465	MEDIAN	5.000	MODE	5.000
STD DEV	1.538	MINIMUM	1.000	MAXIMUM	7.000

(12) A good working relationship with your organization.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	1	.4	.4	.4
Moderately Important	3	2	.8	.8	1.2
Moderately Important	4	9	3.5	3.5	4.7
Moderately Important	5	25	9.7	9.7	14.4
Very Important	6	106	41.2	41.2	55.6
Very Important	7	114	44.4	44.4	100.0
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

1	2.00	*
2	3.00	*
9	4.00	**
25	5.00	*****
106	6.00	*****
114	7.00	*****
I.....I.....I.....I.....I.....I		
0 40 80 120 160 200		

HISTOGRAM FREQUENCY

MEAN	6.237	MEDIAN	6.000	MODE	7.000
STD DEV	.872	MINIMUM	2.000	MAXIMUM	7.000

(13) A commitment to providing the best service possible.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	1	.4	.4	.4
Moderately Important	4	6	2.3	2.3	2.7
Moderately Important	5	12	4.7	4.7	7.4
Very Important	6	81	31.5	31.6	39.1
Very Important	7	156	60.7	60.9	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES			
1	3.00				
6	4.00	**			
12	5.00	***			
81	6.00	*****			
156	7.00	*****			

I.....I.....I.....I.....I.....I					
0	40	80	120	160	200

HISTOGRAM FREQUENCY

MEAN	6.504	MEDIAN	7.000	MODE	7.000
STD DEV	.730	MINIMUM	3.000	MAXIMUM	7.000

(14) A commitment to customer satisfaction.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	1	.4	.4	.4
Moderately Important	4	6	2.3	2.4	2.7
Moderately Important	5	18	7.0	7.1	9.8
Very Important	6	76	29.6	29.8	39.6
Very Important	7	154	59.9	60.4	100.0
	99	2	.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES			
1	3.00				
6	4.00	**			
18	5.00	*****			
76	6.00	*****			
154	7.00	*****			

I.....I.....I.....I.....I.....I					
0	40	80	120	160	200

HISTOGRAM FREQUENCY

MEAN	6.475	MEDIAN	7.000	MODE	7.000
STD DEV	.762	MINIMUM	3.000	MAXIMUM	7.000

(19) Courtesy on the phone.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	4	1.6	1.6	1.6
Moderately Important	4	24	9.3	9.4	11.0
Moderately Important	5	72	28.0	28.3	39.4
Very Important	6	99	38.5	39.0	78.3
Very Important	7	55	21.4	21.7	100.0
	99	3	1.2	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES			
4	3.00	**			
24	4.00	*****			
72	5.00	*****			
99	6.00	*****			
55	7.00	*****			

I.....I.....I.....I.....I.....I					
0	20	40	60	80	100

HISTOGRAM FREQUENCY

MEAN	5.697	MEDIAN	6.000	MODE	6.000
STD DEV	.965	MINIMUM	3.000	MAXIMUM	7.000

(20) Courtesy In Person

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	1	.4	.4	.4
Moderately Important	4	19	7.4	7.4	7.8
Moderately Important	5	70	27.2	27.3	35.2
Very Important	6	100	38.9	39.1	74.2
Very Important	7	66	25.7	25.8	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00			
1	3.00	*			
19	4.00	*****			
70	5.00	*****			
100	6.00	*****			
66	7.00	*****			

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0	20	40	60	80	100

HISTOGRAM FREQUENCY

MEAN	5.824	MEDIAN	6.000	MODE	6.000
STD DEV	.914	MINIMUM	3.000	MAXIMUM	7.000

(21) Military bearing and appearance

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	2	.8	.8	1.2
Moderately Important	3	13	5.1	5.1	6.3
Moderately Important	4	23	8.9	9.0	15.2
Moderately Important	5	58	22.6	22.7	37.9
Very Important	6	84	32.7	32.8	70.7
Very Important	7	75	29.2	29.3	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

1 1.00 *

2 2.00 *

13 3.00 *****

23 4.00 *****

58 5.00 *****

84 6.00 *****

75 7.00 *****

I.....I.....I.....I.....I.....I

0 20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.684	MEDIAN	6.000	MODE	6.000
STD DEV	1.210	MINIMUM	1.000	MAXIMUM	7.000

(22) Ability To Solve Your Problem

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	4	3	1.2	1.2	1.2
Moderately Important	5	24	9.3	9.4	10.5
Very Important	6	96	37.4	37.5	48.0
Very Important	7	133	51.8	52.0	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

3 4.00 *

24 5.00 *****

96 6.00 *****

133 7.00 *****

I.....I.....I.....I.....I.....I

0 40 80 120 160 200

HISTOGRAM FREQUENCY

MEAN	6.402	MEDIAN	7.000	MODE	7.000
STD DEV	.707	MINIMUM	4.000	MAXIMUM	7.000

(23) Fulfill Promises Made

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	1	.4	.4	.8
Moderately Important	3	4	1.6	1.6	2.4
Moderately Important	4	5	1.9	2.0	4.3
Moderately Important	5	24	9.3	9.4	13.8
Very Important	6	93	36.2	36.6	50.4
Very Important	7	126	49.0	49.6	100.0
	99	3	1.2	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

1 1.00
1 2.00
4 3.00
5 4.00
24 5.00
93 6.00
126 7.00

I.....I.....I.....I.....I.....I.....I
0 40 80 120 160 200

HISTOGRAM FREQUENCY

MEAN 6.280 MEDIAN 6.000 MODE 7.000
STD DEV .948 MINIMUM 1.000 MAXIMUM 7.000

(24) Ability to handle the customer's anger or frustration.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	2	.8	.8	.8
Not Important	2	1	.4	.4	1.2
Moderately Important	3	10	3.9	4.0	5.1
Moderately Important	4	32	12.5	12.6	17.8
Moderately Important	5	70	27.2	27.7	45.5
Very Important	6	84	32.7	33.2	78.7
Very Important	7	54	21.0	21.3	100.0
	99	4	1.6	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

2 1.00
1 2.00
10 3.00
32 4.00
70 5.00
84 6.00
54 7.00

I.....I.....I.....I.....I.....I.....I
0 20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN 5.510 MEDIAN 6.000 MODE 6.000
STD DEV 1.174 MINIMUM 1.000 MAXIMUM 7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	1	.4	.4	.4
Moderately Important	4	7	2.7	2.7	3.1
Moderately Important	5	43	16.7	16.8	19.9
Very Important	6	94	36.6	36.7	56.6
Very Important	7	111	43.2	43.4	100.0
	99	1	.4	MISSING	
	TOTAL	257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES
1	3.00	**
7	4.00	*****
43	5.00	*****
94	6.00	*****
111	7.00	*****

HISTOGRAM FREQUENCY

MEAN	6.199	MEDIAN	6.000	MODE	7.000
STD DEV	.842	MINIMUM	3.000	MAXIMUM	7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	4	4	1.6	1.6	1.6
Moderately Important	5	27	10.5	10.5	12.1
Very Important	6	85	33.1	33.2	45.3
Very Important	7	140	54.5	54.7	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES
4	4.00	*
27	5.00	*****
85	6.00	*****
140	7.00	*****

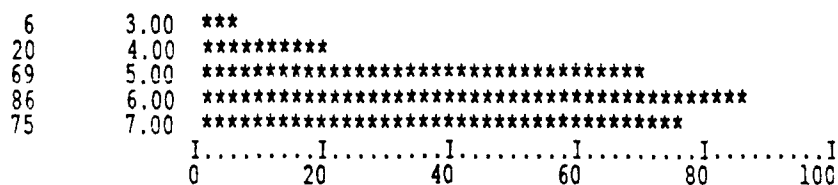
HISTOGRAM FREQUENCY

MEAN	6.410	MEDIAN	7.000	MODE	7.000
STD DEV	.741	MINIMUM	4.000	MAXIMUM	7.000

(27) An enthusiastic attitude.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Moderately Important	3	6	2.3	2.3	2.5
Moderately Important	4	20	7.8	7.8	10.2
Moderately Important	5	69	26.8	27.0	37.1
Very Important	6	86	33.5	33.6	70.7
Very Important	7	75	29.2	29.3	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



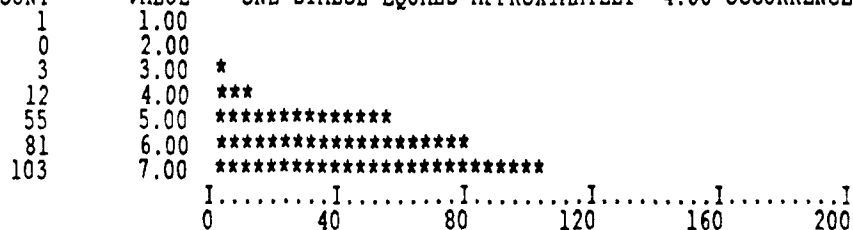
HISTOGRAM FREQUENCY

MEAN	5.797	MEDIAN	6.000	MODE	6.000
STD DEV	1.024	MINIMUM	3.000	MAXIMUM	7.000

(28) A concern about your problem.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Moderately Important	3	3	1.2	1.2	1.6
Moderately Important	4	12	4.7	4.7	6.3
Moderately Important	5	55	21.4	21.6	27.8
Very Important	6	81	31.5	31.8	59.6
Very Important	7	103	40.1	40.4	100.0
	99	2	.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES



HISTOGRAM FREQUENCY

MEAN	6.039	MEDIAN	6.000	MODE	7.000
STD DEV	1.007	MINIMUM	1.000	MAXIMUM	7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	1	.4	.4	.8
Moderately Important	3	4	1.6	1.6	2.4
Moderately Important	4	18	7.0	7.3	9.8
Moderately Important	5	70	27.2	28.6	38.4
Very Important	6	89	34.6	36.3	74.7
Very Important	7	62	24.1	25.3	100.0
	99	12	4.7	MISSING	
TOTAL		257	100.0	100.0	

HISTOGRAM FREQUENCY

(30) Time Required To Fill Out Order Form

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	3	1.2	1.2	1.2
Not Important	2	4	1.6	1.6	2.9
Moderately Important	3	14	5.4	5.8	8.6
Moderately Important	4	32	12.5	13.2	21.8
Moderately Important	5	77	30.0	31.7	53.5
Very Important	6	76	29.6	31.3	84.8
Very Important	7	37	14.4	15.2	100.0
	99	14	5.4	MISSING	
TOTAL		257	100.0	100.0	

HISTOGRAM FREQUENCY

140

(31) Assistance in searching for a part number or stock number.

VALUE LABEL	VALUE	FREQUENCY	VALID PERCENT	CUM PERCENT	PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	3	1.2	1.2	1.6
Moderately Important	3	4	1.6	1.6	3.3
Moderately Important	4	21	8.2	8.6	11.9
Moderately Important	5	53	20.6	21.8	33.7
Very Important	6	90	35.0	37.0	70.8
Very Important	7	71	27.6	29.2	100.0
	99	14	5.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
1	1.00	*
3	2.00	**
4	3.00	**
21	4.00	*****
53	5.00	*****
90	6.00	*****
71	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.782	MEDIAN	6.000	MODE	6.000
STD DEV	1.123	MINIMUM	1.000	MAXIMUM	7.000

(32) Availability of more than one phone line for placing orders.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	8	3.1	3.5	3.5
Moderately Important	3	10	3.9	4.4	7.9
Moderately Important	4	13	5.1	5.7	13.5
Moderately Important	5	59	23.0	25.8	39.3
Very Important	6	83	32.3	36.2	75.5
Very Important	7	56	21.8	24.5	100.0
	99	28	10.9	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
8	2.00	****
10	3.00	*****
13	4.00	*****
59	5.00	*****
83	6.00	*****
56	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.603	MEDIAN	6.000	MODE	6.000
STD DEV	1.237	MINIMUM	2.000	MAXIMUM	7.000

(33) Availability of remote order transmission (computer to computer Order Entry).

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	2	.8	1.0	1.0
Not Important	2	4	1.6	1.9	2.9
Moderately Important	3	9	3.5	4.4	7.3
Moderately Important	4	16	6.2	7.8	15.0
Moderately Important	5	62	24.1	30.1	45.1
Very Important	6	70	27.2	34.0	79.1
Very Important	7	43	16.7	20.9	100.0
	99	51	19.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
2	1.00	*
4	2.00	***
9	3.00	*****
16	4.00	*****
62	5.00	*****
70	6.00	*****
43	7.00	*****
I.....I.....I.....I.....I.....I.....I		
	0	15 30 45 60 75

HISTOGRAM FREQUENCY

MEAN	5.495	MEDIAN	6.000	MODE	6.000
STD DEV	1.233	MINIMUM	1.000	MAXIMUM	7.000

(34) No restriction on number of orders that can be placed over the phone.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	7	2.7	3.1	3.1
Not Important	2	13	5.1	5.8	8.9
Moderately Important	3	20	7.8	8.9	17.9
Moderately Important	4	38	14.8	17.0	34.8
Moderately Important	5	60	23.3	26.8	61.6
Very Important	6	41	16.0	18.3	79.9
Very Important	7	45	17.5	20.1	100.0
	99	33	12.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.20 OCCURRENCES
7	1.00	*****
13	2.00	*****
20	3.00	*****
38	4.00	*****
60	5.00	*****
41	6.00	*****
45	7.00	*****
I.....I.....I.....I.....I.....I.....I		
	0	12 24 36 48 60

HISTOGRAM FREQUENCY

MEAN	4.938	MEDIAN	5.000	MODE	5.000
STD DEV	1.595	MINIMUM	1.000	MAXIMUM	7.000

(35) Clear guidance on due in from maintenance (DIFM) procedures.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	2	.8	.9	.9
Not Important	2	3	1.2	1.4	2.3
Moderately Important	3	13	5.1	6.0	8.3
Moderately Important	4	17	6.6	7.9	16.2
Moderately Important	5	39	15.2	18.1	34.3
Very Important	6	84	32.7	38.9	73.1
Very Important	7	58	22.6	26.9	100.0
	99	41	16.0	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
2	1.00	*
3	2.00	**
13	3.00	*****
17	4.00	*****
39	5.00	*****
84	6.00	*****
58	7.00	*****

I.....I.....I.....I.....I.....I
0 20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.648	MEDIAN	6.000	MODE	6.000
STD DEV	1.282	MINIMUM	1.000	MAXIMUM	7.000

(36) Clear guidance on local purchase procedures.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	1	.4	.4	.4
Moderately Important	3	8	3.1	3.2	3.6
Moderately Important	4	20	7.8	8.0	11.6
Moderately Important	5	59	23.0	23.7	35.3
Very Important	6	93	36.2	37.3	72.7
Very Important	7	68	26.5	27.3	100.0
	99	8	3.1	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
1	2.00	*
8	3.00	****
20	4.00	*****
59	5.00	*****
93	6.00	*****
68	7.00	*****

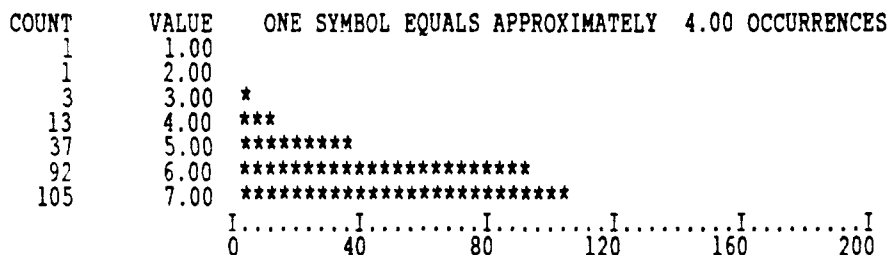
I.....I.....I.....I.....I.....I
0 20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.763	MEDIAN	6.000	MODE	6.000
STD DEV	1.064	MINIMUM	2.000	MAXIMUM	7.000

(37) Ability to meet required delivery times on items available in stock.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	1	.4	.4	.8
Moderately Important	3	3	1.2	1.2	2.0
Moderately Important	4	13	5.1	5.2	7.1
Moderately Important	5	37	14.4	14.7	21.8
Very Important	6	92	35.8	36.5	58.3
Very Important	7	105	40.9	41.7	100.0
	99	5	1.9	MISSING	
TOTAL		257	100.0	100.0	

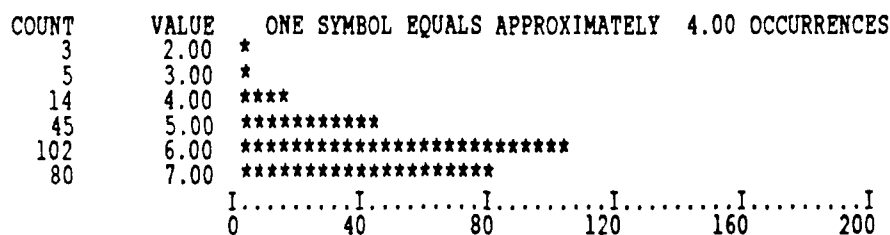


HISTOGRAM FREQUENCY

MEAN	6.095	MEDIAN	6.000	MODE	7.000
STD DEV	1.017	MINIMUM	1.000	MAXIMUM	7.000

(38) Minimum variation between projected and actual delivery dates on items procured from depot.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	3	1.2	1.2	1.2
Moderately Important	3	5	1.9	2.0	3.2
Moderately Important	4	14	5.4	5.6	8.8
Moderately Important	5	45	17.5	18.1	26.9
Very Important	6	102	39.7	41.0	67.9
Very Important	7	80	31.1	32.1	100.0
	99	8	3.1	MISSING	
TOTAL		257	100.0	100.0	



HISTOGRAM FREQUENCY

MEAN	5.920	MEDIAN	6.000	MODE	6.000
STD DEV	1.048	MINIMUM	2.000	MAXIMUM	7.000

(39) Ability to meet required delivery dates on local purchase items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	2	.8	.8	.8
Moderately Important	3	7	2.7	2.8	3.5
Moderately Important	4	16	6.2	6.3	9.8
Moderately Important	5	57	22.2	22.4	32.3
Very Important	6	92	35.8	36.2	68.5
Very Important	7	80	31.1	31.5	100.0
	99	3	1.2	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

2	2.00	*
7	3.00	****
16	4.00	*****
57	5.00	*****
92	6.00	*****
80	7.00	*****
I.....I.....I.....I.....I.....I		
0 20 40 60 80 100		

HISTOGRAM FREQUENCY

MEAN	5.850	MEDIAN	6.000	MODE	6.000
STD DEV	1.071	MINIMUM	2.000	MAXIMUM	7.000

(40) Minimum variation between required and actual delivery dates on MICAP items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	4	1.6	1.9	1.9
Moderately Important	3	4	1.6	1.9	3.7
Moderately Important	4	13	5.1	6.1	9.8
Moderately Important	5	20	7.8	9.3	19.2
Very Important	6	54	21.0	25.2	44.4
Very Important	7	119	46.3	55.6	100.0
	99	43	16.7	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

4	2.00	*
4	3.00	*
13	4.00	***
20	5.00	*****
54	6.00	*****
119	7.00	*****
I.....I.....I.....I.....I.....I		
0 40 80 120 160 200		

HISTOGRAM FREQUENCY

MEAN	6.210	MEDIAN	7.000	MODE	7.000
STD DEV	1.150	MINIMUM	2.000	MAXIMUM	7.000

(41) Fill rate on base level stock items (% of orders received complete the first time).

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	2	.8	.8	1.2
Moderately Important	3	3	1.2	1.2	2.4
Moderately Important	4	26	10.1	10.6	13.0
Moderately Important	5	59	23.0	24.0	37.0
Very Important	6	100	38.9	40.7	77.6
Very Important	7	55	21.4	22.4	100.0
	99	11	4.3	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
1	1.00	*
2	2.00	*
3	3.00	**
26	4.00	*****
59	5.00	*****
100	6.00	*****
55	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.683	MEDIAN	6.000	MODE	6.000
STD DEV	1.064	MINIMUM	1.000	MAXIMUM	7.000

(42) Availability of bench stock items when needed.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	2	.8	.9	1.3
Moderately Important	3	6	2.3	2.6	3.9
Moderately Important	4	10	3.9	4.3	8.3
Moderately Important	5	39	15.2	17.0	25.2
Very Important	6	86	33.5	37.4	62.6
Very Important	7	86	33.5	37.4	100.0
	99	27	10.5	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
1	1.00	*
2	2.00	*
6	3.00	***
10	4.00	*****
39	5.00	*****
86	6.00	*****
86	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.983	MEDIAN	6.000	MODE	6.000
STD DEV	1.098	MINIMUM	1.000	MAXIMUM	7.000

(43) Availability of supply point items when needed.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	2	.8	.9	.9
Moderately Important	3	8	3.1	3.6	4.5
Moderately Important	4	15	5.8	6.8	11.3
Moderately Important	5	42	16.3	19.0	30.3
Very Important	6	90	35.0	40.7	71.0
Very Important	7	64	24.9	29.0	100.0
	99	36	14.0	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

2	2.00	*
8	3.00	****
15	4.00	*****
42	5.00	*****
90	6.00	*****
64	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.819	MEDIAN	6.000	MODE	6.000
STD DEV	1.093	MINIMUM	2.000	MAXIMUM	7.000

(44) Adequate stock of base service store items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	5	1.9	2.0	2.4
Moderately Important	3	12	4.7	4.8	7.1
Moderately Important	4	34	13.2	13.5	20.6
Moderately Important	5	70	27.2	27.8	48.4
Very Important	6	80	31.1	31.7	80.2
Very Important	7	50	19.5	19.8	100.0
	99	5	1.9	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

1	1.00	*
5	2.00	***
12	3.00	*****
34	4.00	*****
70	5.00	*****
80	6.00	*****
50	7.00	*****
I.....I.....I.....I.....I.....I		
	0	20 40 60 80 100

HISTOGRAM FREQUENCY

MEAN	5.409	MEDIAN	6.000	MODE	6.000
STD DEV	1.232	MINIMUM	1.000	MAXIMUM	7.000

(45) Adequate stock of individual equipment items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	1	1	.4	.4	.4
Not Important	2	4	1.6	1.7	2.1
Moderately Important	3	18	7.0	7.4	9.5
Moderately Important	4	39	15.2	16.1	25.6
Moderately Important	5	74	28.8	30.6	56.2
Very Important	6	72	28.0	29.8	86.0
Very Important	7	34	13.2	14.0	100.0
	99	15	5.8	MISSING	

TOTAL 257 100.0 100.0

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

1 1.00 *
4 2.00 ***
18 3.00 *****
39 4.00 *****
74 5.00 *****
72 6.00 *****
34 7.00 *****

I.....I.....I.....I.....I.....I.....I
0 15 30 45 60 75

HISTOGRAM FREQUENCY

MEAN 5.202 MEDIAN 5.000 MODE 5.000
STD DEV 1.224 MINIMUM 1.000 MAXIMUM 7.000

(46) Ability to expedite MICAP requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	3	1.2	1.5	1.5
Moderately Important	3	3	1.2	1.5	2.9
Moderately Important	4	7	2.7	3.4	6.4
Moderately Important	5	16	6.2	7.8	14.2
Very Important	6	56	21.8	27.5	41.7
Very Important	7	119	46.3	58.3	100.0
	99	53	20.6	MISSING	

TOTAL 257 100.0 100.0

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 4.00 OCCURRENCES

3 2.00 *
3 3.00 *
7 4.00 **
16 5.00 ****
56 6.00 *****
119 7.00 *****

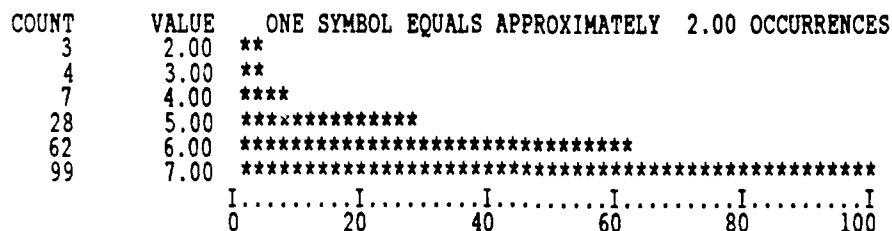
I.....I.....I.....I.....I.....I.....I
0 40 80 120 160 200

HISTOGRAM FREQUENCY

MEAN 6.333 MEDIAN 7.000 MODE 7.000
STD DEV 1.030 MINIMUM 2.000 MAXIMUM 7.000

(47) Ability to expedite out of the ordinary MICAP requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	3	1.2	1.5	1.5
Moderately Important	3	4	1.6	2.0	3.4
Moderately Important	4	7	2.7	3.4	6.9
Moderately Important	5	28	10.9	13.8	20.7
Very Important	6	62	24.1	30.5	51.2
Very Important	7	99	38.5	48.8	100.0
	99	54	21.0	MISSING	
TOTAL		257	100.0	100.0	

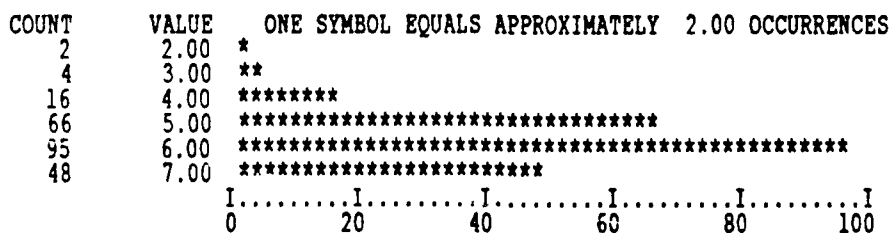


HISTOGRAM FREQUENCY

MEAN	6.163	MEDIAN	6.000	MODE	7.000
STD DEV	1.075	MINIMUM	2.000	MAXIMUM	7.000

(48) Ability to expedite non-MICAP requests when necessary.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	2	.8	.9	.9
Moderately Important	3	4	1.6	1.7	2.6
Moderately Important	4	16	6.2	6.9	9.5
Moderately Important	5	66	25.7	28.6	38.1
Very Important	6	95	37.0	41.1	79.2
Very Important	7	48	18.7	20.8	100.0
	99	26	10.1	MISSING	
TOTAL		257	100.0	100.0	



HISTOGRAM FREQUENCY

MEAN	5.697	MEDIAN	6.000	MODE	6.000
STD DEV	.989	MINIMUM	2.000	MAXIMUM	7.000

(49) Ability to handle out of the ordinary delivery requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	2	.8	.8	.8
Moderately Important	3	6	2.3	2.5	3.3
Moderately Important	4	17	6.6	7.0	10.3
Moderately Important	5	82	31.9	33.7	44.0
Very Important	6	94	36.6	38.7	82.7
Very Important	7	42	16.3	17.3	100.0
	99	14	5.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

2	2.00	*
6	3.00	***
17	4.00	*****
82	5.00	*****
94	6.00	*****
42	7.00	*****
I.....I.....I.....I.....I.....I		
0 20 40 60 80 100		

HISTOGRAM FREQUENCY

MEAN	5.588	MEDIAN	6.000	MODE	6.000
STD DEV	.989	MINIMUM	2.000	MAXIMUM	7.000

(50) Ability to expedite out of the ordinary local purchase requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	3	1.2	1.2	1.2
Moderately Important	3	5	1.9	2.0	3.2
Moderately Important	4	41	16.0	16.4	19.6
Moderately Important	5	75	29.2	30.0	49.6
Very Important	6	89	34.6	35.6	85.2
Very Important	7	37	14.4	14.8	100.0
	99	7	2.7	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

3	2.00	**
5	3.00	***
41	4.00	*****
75	5.00	*****
89	6.00	*****
37	7.00	*****
I.....I.....I.....I.....I.....I		
0 20 40 60 80 100		

HISTOGRAM FREQUENCY

MEAN	5.412	MEDIAN	6.000	MODE	6.000
STD DEV	1.065	MINIMUM	2.000	MAXIMUM	7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Important	2	5	1.9	2.0	2.0
Moderately Important	3	7	2.7	2.8	4.8
Moderately Important	4	28	10.9	11.2	16.0
Moderately Important	5	68	26.5	27.2	43.2
Very Important	6	82	31.9	32.8	76.0
Very Important	7	60	23.3	24.0	100.0
	99	7	2.7	MISSING	
TOTAL		257	100.0	100.0	

MEAN	5.580	MEDIAN	6.000	MODE	6.000
STD DEV	1.167	MINIMUM	2.000	MAXIMUM	7.000

MEASURES OF PERFORMANCE

(1) Promptness in answering the telephone

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	3	1.2	1.2	1.2
Poor	1	2	.8	.8	2.0
Poor	2	3	1.2	1.2	3.2
Satisfactory	3	17	6.6	6.8	10.0
Satisfactory	4	39	15.2	15.6	25.6
Satisfactory	5	79	30.7	31.6	57.2
Excellent	6	77	30.0	30.8	88.0
Excellent	7	30	11.7	12.0	100.0
	99	7	2.7	MISSING	
	TOTAL	257	100.0	100.0	

```

COUNT      VALUE  ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
  3         .00  **
  2         1.00  *
  3         2.00  **
 17         3.00  *****
 39         4.00  *****
 79         5.00  *****
 77         6.00  *****
 30         7.00  *****

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HISTOGRAM FREQUENCY					
MEAN	5.128	MEDIAN	5.000	MODE	5.000
STD DEV	1.320	MINIMUM	.000	MAXIMUM	7.000

(2) A method for handling customer complaints.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	4	1.6	1.6	1.6
Poor	1	2	.8	.8	2.4
Poor	2	17	6.6	6.9	9.3
Satisfactory	3	28	10.9	11.4	20.7
Satisfactory	4	40	15.6	16.3	37.0
Satisfactory	5	76	29.6	30.9	67.9
Excellent	6	49	19.1	19.9	87.8
Excellent	7	30	11.7	12.2	100.0
	99	11	4.3	MISSING	
	TOTAL	257	100.0	100.0	

```

COUNT      VALUE      ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
  4          .00      **
  2          1.00      *
 17          2.00      *****
 28          3.00      *****
 40          4.00      *****
 76          5.00      *****
 49          6.00      *****
 30          7.00      *****

I.....I.....I.....I.....I.....I
0          20         40         60         80        100
HISTOGRAM FREQUENCY

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MEAN	4.732	MEDIAN	5.000	MODE	5.000
STD DEV	1.550	MINIMUM	.000	MAXIMUM	7.000

(3) Accessibility to the NCOIC or OIC when needed to resolve a problem.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	9	3.5	3.6	3.6
Poor	1	5	1.9	2.0	5.6
Poor	2	7	2.7	2.8	8.5
Satisfactory	3	21	8.2	8.5	16.9
Satisfactory	4	41	16.0	16.5	33.5
Satisfactory	5	67	26.1	27.0	60.5
Excellent	6	72	28.0	29.0	89.5
Excellent	7	26	10.1	10.5	100.0
	99	9	3.5	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
9	.00	*****
5	1.00	***
7	2.00	*****
21	3.00	*****
41	4.00	*****
67	5.00	*****
72	6.00	*****
26	7.00	*****
I.....I.....I.....I.....I.....I		
0 15 30 45 60 75		

HISTOGRAM FREQUENCY					
MEAN	4.819	MEDIAN	5.000	MODE	6.000
STD DEV	1.636	MINIMUM	.000	MAXIMUM	7.000

(10) Accessibility of Base Service Store and Individual Equipment Unit.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	3	1.2	1.2	1.2
Poor	2	1	.4	.4	1.6
Satisfactory	3	11	4.3	4.4	6.0
Satisfactory	4	27	10.5	10.8	16.8
Satisfactory	5	70	27.2	28.0	44.8
Excellent	6	94	36.6	37.6	82.4
Excellent	7	44	17.1	17.6	100.0
	99	7	2.7	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES
3	.00	**
0	1.00	
1	2.00	*
11	3.00	*****
27	4.00	*****
70	5.00	*****
94	6.00	*****
44	7.00	*****
		I.....I.....I.....I.....I.....I
		0 20 40 60 80 100

HISTOGRAM FREQUENCY					
MEAN	5.460	MEDIAN	6.000	MODE	6.000
STD DEV	1.222	MINIMUM	.000	MAXIMUM	7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	22	8.6	9.1	9.1
Poor	1	25	9.7	10.4	19.5
Poor	2	31	12.1	12.9	32.4
Satisfactory	3	49	19.1	20.3	52.7
Satisfactory	4	38	14.8	15.8	68.5
Satisfactory	5	48	18.7	19.9	88.4
Excellent	6	20	7.8	8.3	96.7
Excellent	7	8	3.1	3.3	100.0
	99	16	6.2	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.00 OCCURRENCE
22	.00	*****
25	1.00	*****
31	2.00	*****
49	3.00	*****
38	4.00	*****
48	5.00	*****
20	6.00	*****
8	7.00	*****

I.....I.....I.....I.....I.....I

0 10 20 30 40 50

		HISTOGRAM FREQUENCY			
MEAN	3.328	MEDIAN	3.000	MODE	3.000
STD DEV	1.872	MINIMUM	.000	MAXIMUM	7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	4	1.6	1.6	1.6
Poor	1	3	1.2	1.2	2.7
Poor	2	8	3.1	3.1	5.8
Satisfactory	3	30	11.7	11.7	17.5
Satisfactory	4	30	11.7	11.7	29.2
Satisfactory	5	72	28.0	28.0	57.2
Excellent	6	71	27.6	27.6	84.8
Excellent	7	39	15.2	15.2	100.0
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
4	.00	***
3	1.00	**
8	2.00	*****
30	3.00	*****
30	4.00	*****
72	5.00	*****
71	6.00	*****
39	7.00	*****

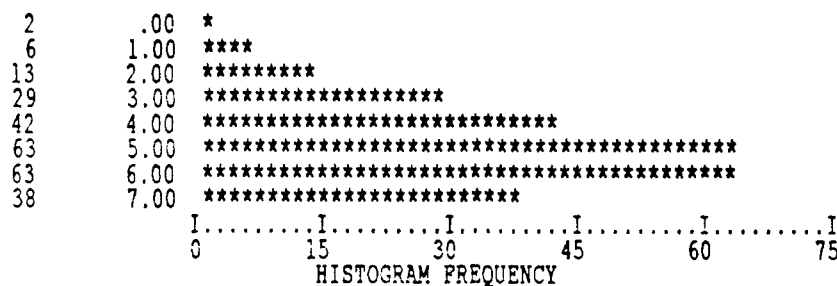
HISTOGRAM FREQUENCY

MEAN	5.012	MEDIAN	5.000	MODE	5.000
STD DEV	1.527	MINIMUM	.000	MAXIMUM	7.000

(7) A commitment to providing the best service possible.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	2	.8	.8	.8
Poor	1	6	2.3	2.3	3.1
Poor	2	13	5.1	5.1	8.2
Satisfactory	3	29	11.3	11.3	19.5
Satisfactory	4	42	16.3	16.4	35.9
Satisfactory	5	63	24.5	24.6	60.5
Excellent	6	63	24.5	24.6	85.2
Excellent	7	38	14.8	14.8	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

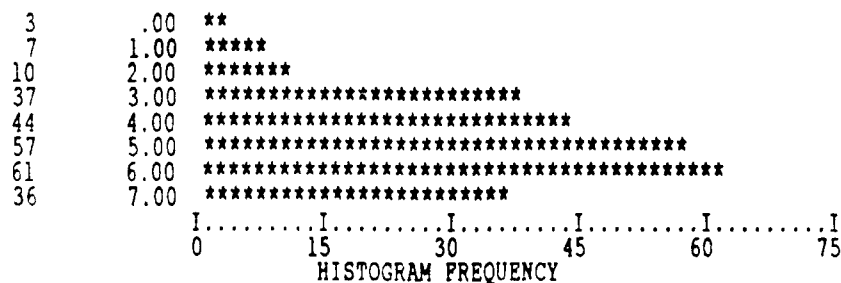


MEAN	4.867	MEDIAN	5.000	MODE	5.000
STD DEV	1.574	MINIMUM	.000	MAXIMUM	7.000

(8) A commitment to customer satisfaction

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	3	1.2	1.2	1.2
Poor	1	7	2.7	2.7	3.9
Poor	2	10	3.9	3.9	7.8
Satisfactory	3	37	14.4	14.5	22.4
Satisfactory	4	44	17.1	17.3	39.6
Satisfactory	5	57	22.2	22.4	62.0
Excellent	6	61	23.7	23.9	85.9
Excellent	7	36	14.0	14.1	100.0
	99	2	.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

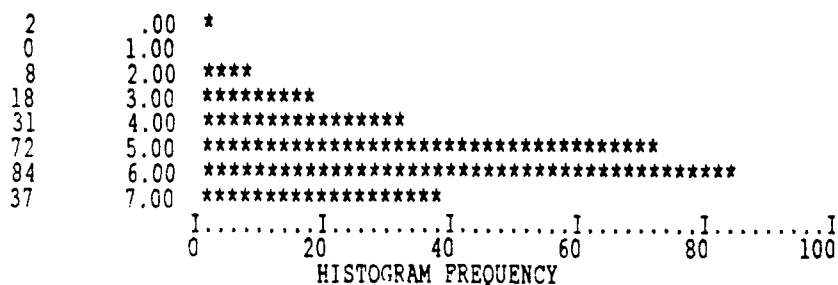


MEAN	4.773	MEDIAN	5.000	MODE	6.000
STD DEV	1.613	MINIMUM	.000	MAXIMUM	7.000

(13) Courtesy on the phone.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	2	.8	.8	.8
Poor	2	8	3.1	3.2	4.0
Satisfactory	3	18	7.0	7.1	11.1
Satisfactory	4	31	12.1	12.3	23.4
Satisfactory	5	72	28.0	28.6	52.0
Excellent	6	84	32.7	33.3	85.3
Excellent	7	37	14.4	14.7	100.0
	99	5	1.9	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

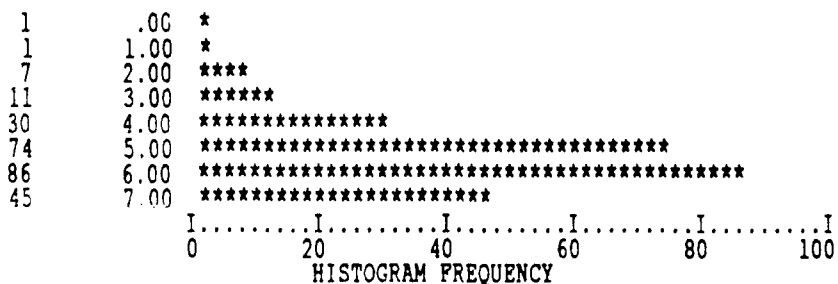


MEAN	5.226	MEDIAN	5.000	MODE	6.000
STD DEV	1.330	MINIMUM	.000	MAXIMUM	7.000

(14) Courtesy In Person

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	1	.4	.4	.4
Poor	1	1	.4	.4	.8
Poor	2	7	2.7	2.7	3.5
Satisfactory	3	11	4.3	4.3	7.8
Satisfactory	4	30	11.7	11.8	19.6
Satisfactory	5	74	28.8	29.0	48.6
Excellent	6	86	33.5	33.7	82.4
Excellent	7	45	17.5	17.6	100.0
	99	2	.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



MEAN	5.369	MEDIAN	6.000	MODE	6.000
STD DEV	1.269	MINIMUM	.000	MAXIMUM	7.000

VALUE LABEL	VALUE	VALID FREQUENCY	CUM PERCENT	PERCENT	PERCENT
Not Provided	0	1	.4	.4	.4
Poor	2	6	2.3	2.3	2.7
Satisfactory	3	16	6.2	6.3	9.0
Satisfactory	4	30	11.7	11.7	20.7
Satisfactory	5	77	30.0	30.1	50.8
Excellent	6	93	36.2	36.3	87.1
Excellent	7	33	12.8	12.9	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

```

1      .00 *
0      1.00
6      2.00 ***
16     3.00 *****
30     4.00 *****
77     5.00 *****
93     6.00 *****
33     7.00 *****
I.....I.....I.....I.....I.....I.....I.....I.....I
0          20         40        60       80      100
HISTOGRAM FREQUENCY

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VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	2	.8	.8	.8
Poor	1	6	2.3	2.4	3.2
Poor	2	10	3.9	4.0	7.1
Satisfactory	3	25	9.7	9.9	17.0
Satisfactory	4	46	17.9	18.2	35.2
Satisfactory	5	62	24.1	24.5	59.7
Excellent	6	66	25.7	26.1	85.8
Excellent	7	36	14.0	14.2	100.0
	99	4	1.6	MISSING	
TOTAL		257	100.0	100.0	

```

2      .00  *
6      1.00 ****
10     2.00 *******
25     3.00 ********************
46     4.00 ********************
62     5.00 ********************
66     6.00 ********************
36     7.00 ********************

I.....I.....I.....I.....I
0          15          30          45          60          75
HISTOGRAM FREQUENCY

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VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	8	3.1	3.2	3.2
Poor	1	8	3.1	3.2	6.4
Poor	2	8	3.1	3.2	9.6
Satisfactory	3	36	14.0	14.3	23.9
Satisfactory	4	35	13.6	13.9	37.8
Satisfactory	5	61	23.7	24.3	62.2
Excellent	6	64	24.9	25.5	87.6
Excellent	7	31	12.1	12.4	100.0
	99	6	2.3	MISSING	
	TOTAL	257	100.0	100.0	

```

8      .00 *****
8      1.00 *****
8      2.00 *****
36     3.00 *****
35     4.00 *****
61     5.00 *****
64     6.00 *****
31     7.00 *****

I.....I.....I.....I.....I
0      15      30      45      60      75
HISTOGRAM FREQUENCY

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VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	15	5.8	6.0	6.0
Poor	1	5	1.9	2.0	8.0
Poor	2	5	1.9	2.0	10.0
Satisfactory	3	35	13.6	14.0	24.0
Satisfactory	4	37	14.4	14.8	38.8
Satisfactory	5	70	27.2	28.0	66.8
Excellent	6	62	24.1	24.8	91.6
Excellent	7	21	8.2	8.4	100.0
	99	7	2.7	MISSING	
TOTAL		257	100.0	100.0	

```

15      .00 *****
5       1.00 ***
5       2.00 ***
35      3.00 *****
37      4.00 *****
70      5.00 *****
62      6.00 *****
21      7.00 *****

I.....I.....I.....I.....I.....I
0          15          30          45          60          75
HISTOGRAM FREQUENCY

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(19) Professionalism

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	1	.4	.4	.4
Poor	2	11	4.3	4.3	4.7
Satisfactory	3	15	5.8	5.9	10.5
Satisfactory	4	38	14.8	14.8	25.4
Satisfactory	5	62	24.1	24.2	49.6
Excellent	6	92	35.8	35.9	85.5
Excellent	7	37	14.4	14.5	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

1	.00	*
0	1.00	
11	2.00	*****
15	3.00	*****
38	4.00	*****
62	5.00	*****
92	6.00	*****
37	7.00	*****
	I.....I.....I.....I.....I.....I	
	0 20 40 60 80 100	
	HISTOGRAM FREQUENCY	

MEAN	5.234	MEDIAN	6.000	MODE	6.000
STD DEV	1.325	MINIMUM	.000	MAXIMUM	7.000

(20) Competence

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	1	.4	.4	.4
Poor	1	7	2.7	2.7	3.1
Poor	2	9	3.5	3.5	6.6
Satisfactory	3	22	8.6	8.6	15.2
Satisfactory	4	49	19.1	19.1	34.4
Satisfactory	5	57	22.2	22.3	56.6
Excellent	6	72	28.0	28.1	84.8
Excellent	7	39	15.2	15.2	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

1	.00	*
7	1.00	*****
9	2.00	*****
22	3.00	*****
49	4.00	*****
57	5.00	*****
72	6.00	*****
39	7.00	*****
	I.....I.....I.....I.....I.....I	
	0 15 30 45 60 75	
	HISTOGRAM FREQUENCY	

MEAN	4.988	MEDIAN	5.000	MODE	6.000
STD DEV	1.512	MINIMUM	.000	MAXIMUM	7.000

(21) An enthusiastic attitude.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	1	.4	.4	.4
Poor	1	8	3.1	3.1	3.5
Poor	2	15	5.8	5.9	9.4
Satisfactory	3	32	12.5	12.5	21.9
Satisfactory	4	47	18.3	18.4	40.2
Satisfactory	5	72	28.0	28.1	68.4
Excellent	6	56	21.8	21.9	90.2
Excellent	7	25	9.7	9.8	100.0
	99	1	.4	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
1	.00	*
8	1.00	*****
15	2.00	*****
32	3.00	*****
47	4.00	*****
72	5.00	*****
56	6.00	*****
25	7.00	*****

I.....I.....I.....I.....I.....I
0 15 30 45 60 75
HISTOGRAM FREQUENCY

MEAN	4.660	MEDIAN	5.000	MODE	5.000
STD DEV	1.520	MINIMUM	.000	MAXIMUM	7.000

(22) A concern about your problem.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	2	.8	.8	.8
Poor	1	10	3.9	3.9	4.7
Poor	2	15	5.8	5.9	10.6
Satisfactory	3	36	14.0	14.2	24.8
Satisfactory	4	40	15.6	15.7	40.6
Satisfactory	5	65	25.3	25.6	66.1
Excellent	6	58	22.6	22.8	89.0
Excellent	7	28	10.9	11.0	100.0
	99	3	1.2	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
2	.00	*
10	1.00	*****
15	2.00	*****
36	3.00	*****
40	4.00	*****
65	5.00	*****
58	6.00	*****
28	7.00	*****

I.....I.....I.....I.....I.....I
0 15 30 45 60 75
HISTOGRAM FREQUENCY

MEAN	4.634	MEDIAN	5.000	MODE	5.000
STD DEV	1.621	MINIMUM	.000	MAXIMUM	7.000

(23) Ease and simplicity of order form.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	11	4.3	4.5	4.5
Poor	1	1	.4	.4	5.0
Poor	2	10	3.9	4.1	9.1
Satisfactory	3	26	10.1	10.7	19.8
Satisfactory	4	34	13.2	14.0	33.9
Satisfactory	5	73	28.4	30.2	64.0
Excellent	6	64	24.9	26.4	90.5
Excellent	7	23	8.9	9.5	100.0
	99	15	5.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

```

11 .00 *****
1 1.00 *
10 2.00 *****
26 3.00 *****
34 4.00 *****
73 5.00 *****
64 6.00 *****
23 7.00 *****

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MEAN	4.731	MEDIAN	5.000	MODE	5.000
STD DEV	1.652	MINIMUM	.000	MAXIMUM	7.000

(24) Time Required To Fill Out Order Form

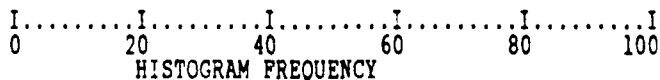
VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	9	3.5	3.8	3.8
Poor	2	6	2.3	2.5	6.3
Satisfactory	3	25	9.7	10.4	16.7
Satisfactory	4	34	13.2	14.2	30.8
Satisfactory	5	80	31.1	33.3	64.2
Excellent	6	63	24.5	26.2	90.4
Excellent	7	23	8.9	9.6	100.0
	99	17	6.6	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

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9 .00 *****
0 1.00 *****
6 2.00 *****
25 3.00 *****
34 4.00 *****
80 5.00 *****
63 6.00 *****
23 7.00 *****

```



MEAN	4.842	MEDIAN	5.000	MODE	5.000
STD DEV	1.533	MINIMUM	.000	MAXIMUM	7.000

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	9	3.5	3.7	3.7
Poor	1	5	1.9	2.1	5.8
Poor	2	10	3.9	4.1	9.9
Satisfactory	3	25	9.7	10.3	20.2
Satisfactory	4	28	10.9	11.6	31.8
Satisfactory	5	57	22.2	23.6	55.4
Excellent	6	71	27.6	29.3	84.7
Excellent	7	37	14.4	15.3	100.0
	99	15	5.8	MISSING	
TOTAL		257	100.0	100.0	

```

9      .00 *****
5     1.00 ***
10    2.00 *****
25    3.00 *****
28    4.00 *****
57    5.00 *****
71    6.00 *****
37    7.00 *****
          I.....I.....I.....I.....I
          0        15       30       45       60       75
                HISTOGRAM FREQUENCY

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(26) Availability of more than one phone line for placing orders.

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

```

13      .00 *****
5       1.00 ***
8       2.00 *****
18      3.00 *****
42      4.00 *****
61      5.00 *****
49      6.00 *****
28      7.00 *****

I.....I.....I.....I.....I
0          15          30          45          60          75
HISTOGRAM FREQUENCY

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VALUE LABEL	VALUE	VALID FREQUENCY	CUM PERCENT	PERCENT	PERCENT
Not Provided	0	27	10.5	13.4	13.4
Poor	1	4	1.6	2.0	15.3
Poor	2	4	1.6	2.0	17.3
Satisfactory	3	19	7.4	9.4	26.7
Satisfactory	4	28	10.9	13.9	40.6
Satisfactory	5	56	21.8	27.7	68.3
Excellent	6	47	18.3	23.3	91.6
Excellent	7	17	6.6	8.4	100.0
	99	55	21.4	MISSING	
	TOTAL	257	100.0	100.0	

MEAN	4.267	MEDIAN	5.000	MODE	5.000
STD DEV	2.099	MINIMUM	.000	MAXIMUM	7.000

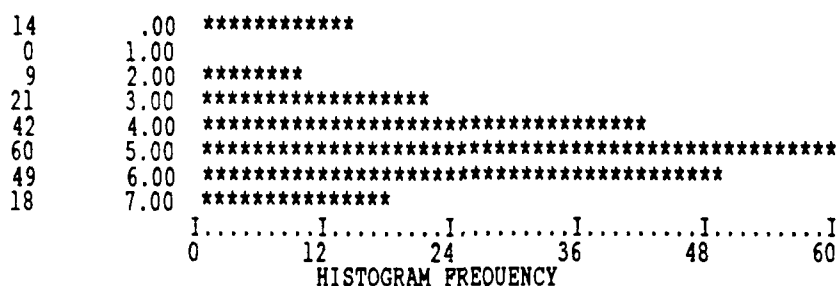
VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	20	7.8	9.2	9.2
Poor	1	11	4.3	5.1	14.3
Poor	2	13	5.1	6.0	20.3
Satisfactory	3	19	7.4	8.8	29.0
Satisfactory	4	55	21.4	25.3	54.4
Satisfactory	5	51	19.8	23.5	77.9
Excellent	6	33	12.8	15.2	93.1
Excellent	7	15	5.8	6.9	100.0
	99	40	15.6	MISSING	
TOTAL		257	100.0	100.0	

MEAN	4.018	MEDIAN	4.000	MODE	4.000
STD DEV	1.934	MINIMUM	.000	MAXIMUM	7.000

(29) Clear guidance on due in from maintenance (DIPM) procedures.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	14	5.4	6.6	6.6
Poor	2	9	3.5	4.2	10.8
Satisfactory	3	21	8.2	9.9	20.7
Satisfactory	4	42	16.3	19.7	40.4
Satisfactory	5	60	23.3	28.2	68.5
Excellent	6	49	19.1	23.0	91.5
Excellent	7	18	7.0	8.5	100.0
	99	44	17.1	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.20 OCCURRENCES

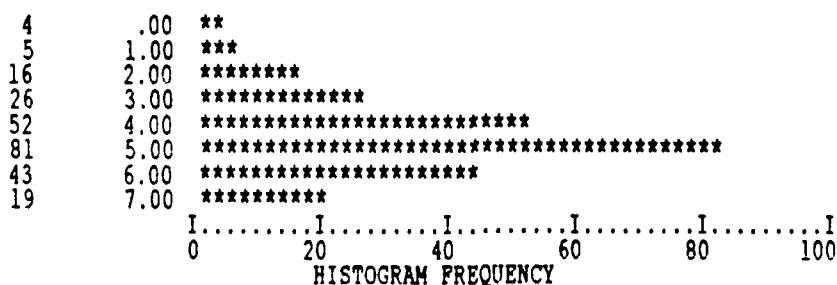


MEAN	4.549	MEDIAN	5.000	MODE	5.000
STD DEV	1.730	MINIMUM	.000	MAXIMUM	7.000

(30) Clear guidance on local purchase procedures.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	4	1.6	1.6	1.6
Poor	1	5	1.9	2.0	3.7
Poor	2	16	6.2	6.5	10.2
Satisfactory	3	26	10.1	10.6	20.7
Satisfactory	4	52	20.2	21.1	41.9
Satisfactory	5	81	31.5	32.9	74.8
Excellent	6	43	16.7	17.5	92.3
Excellent	7	19	7.4	7.7	100.0
	99	11	4.3	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES



MEAN	4.549	MEDIAN	5.000	MODE	5.000
STD DEV	1.497	MINIMUM	.000	MAXIMUM	7.000

(31) Ability to meet required delivery times on items available in stock.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	4	1.6	1.6	1.6
Poor	1	8	3.1	3.2	4.8
Poor	2	12	4.7	4.8	9.6
Satisfactory	3	34	13.2	13.7	23.3
Satisfactory	4	35	13.6	14.1	37.3
Satisfactory	5	74	28.8	29.7	67.1
Excellent	6	58	22.6	23.3	90.4
Excellent	7	24	9.3	9.6	100.0
	99	8	3.1	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES			
4	.00	***			
8	1.00	*****			
12	2.00	*****			
34	3.00	*****			
35	4.00	*****			
74	5.00	*****			
58	6.00	*****			
24	7.00	*****			

I.....I.....I.....I.....I.....I.....I	
0 15 30 45 60 75	HISTOGRAM FREQUENCY

MEAN	4.659	MEDIAN	5.000	MODE	5.000
STD DEV	1.596	MINIMUM	.000	MAXIMUM	7.000

(32) Minimum variation between projected and actual delivery dates on items procured from depot.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	7	2.7	2.8	2.8
Poor	1	12	4.7	4.8	7.6
Poor	2	25	9.7	10.0	17.7
Satisfactory	3	40	15.6	16.1	33.7
Satisfactory	4	54	21.0	21.7	55.4
Satisfactory	5	71	27.6	28.5	83.9
Excellent	6	31	12.1	12.4	96.4
Excellent	7	9	3.5	3.6	100.0
	99	8	3.1	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES			
7	.00	*****			
12	1.00	*****			
25	2.00	*****			
40	3.00	*****			
54	4.00	*****			
71	5.00	*****			
31	6.00	*****			
9	7.00	*****			

I.....I.....I.....I.....I.....I.....I	
0 15 30 45 60 75	HISTOGRAM FREQUENCY

MEAN	4.024	MEDIAN	4.000	MODE	5.000
STD DEV	1.601	MINIMUM	.000	MAXIMUM	7.000

(33) Ability to meet required delivery dates on local purchase items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	7	2.7	2.8	2.8
Poor	1	11	4.3	4.4	7.2
Poor	2	26	10.1	10.4	17.5
Satisfactory	3	35	13.6	13.9	31.5
Satisfactory	4	55	21.4	21.9	53.4
Satisfactory	5	57	22.2	22.7	76.1
Excellent	6	49	19.1	19.5	95.6
Excellent	7	11	4.3	4.4	100.0
	99	6	2.3	MISSING	

TOTAL 257 100.0 100.0

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.20 OCCURRENCES

7	.00	*****
11	1.00	*****
26	2.00	*****
35	3.00	*****
55	4.00	*****
57	5.00	*****
49	6.00	*****
11	7.00	*****
I.....I.....I.....I.....I.....I		
0	12	24
		36
		48
		60

HISTOGRAM FREQUENCY

MEAN 4.159 MEDIAN 4.000 MODE 5.000
STD DEV 1.668 MINIMUM .000 MAXIMUM 7.000

(34) Minimum variation between required and actual delivery dates on MICAP items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	20	7.8	9.6	9.6
Poor	1	10	3.9	4.8	14.4
Poor	2	14	5.4	6.7	21.1
Satisfactory	3	21	8.2	10.0	31.1
Satisfactory	4	28	10.9	13.4	44.5
Satisfactory	5	51	19.8	24.4	68.9
Excellent	6	50	19.5	23.9	92.8
Excellent	7	15	5.8	7.2	100.0
	99	48	18.7	MISSING	

TOTAL 257 100.0 100.0

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.20 OCCURRENCES

20	.00	*****
10	1.00	*****
14	2.00	*****
21	3.00	*****
28	4.00	*****
51	5.00	*****
50	6.00	*****
15	7.00	*****
I.....I.....I.....I.....I.....I		
0	12	24
		36
		48
		60

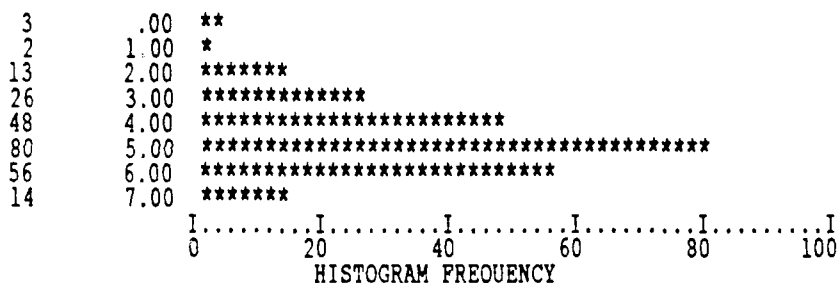
HISTOGRAM FREQUENCY

MEAN 4.177 MEDIAN 5.000 MODE 5.000
STD DEV 2.041 MINIMUM .000 MAXIMUM 7.000

(35) Fill rate on base level stock items (% of orders received complete the first time.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	3	1.2	1.2	1.2
Poor	1	2	.8	.8	2.1
Poor	2	13	5.1	5.1	7.4
Satisfactory	3	26	10.1	10.1	18.2
Satisfactory	4	48	18.7	19.8	38.0
Satisfactory	5	80	31.1	33.1	71.1
Excellent	6	56	21.8	23.1	94.2
Excellent	7	14	5.4	5.8	100.0
	99	15	5.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

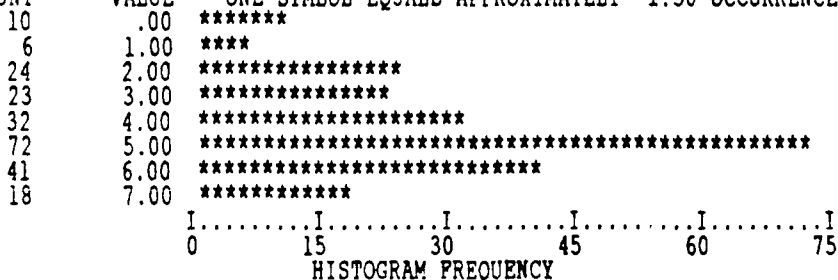


MEAN	4.678	MEDIAN	5.000	MODE	5.000
STD DEV	1.386	MINIMUM	.000	MAXIMUM	7.000

(36) Availability of bench stock items when needed.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	10	3.9	4.4	4.4
Poor	1	6	2.3	2.7	7.1
Poor	2	24	9.3	10.6	17.7
Satisfactory	3	23	8.9	10.2	27.9
Satisfactory	4	32	12.5	14.2	42.0
Satisfactory	5	72	28.0	31.9	73.9
Excellent	6	41	16.0	18.1	92.0
Excellent	7	18	7.0	8.0	100.0
	99	31	12.1	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES



MEAN	4.350	MEDIAN	5.000	MODE	5.000
STD DEV	1.788	MINIMUM	.000	MAXIMUM	7.000

(37) Availability of supply point items when needed.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	14	5.4	6.5	6.5
Poor	2	8	3.1	3.7	10.2
Satisfactory	3	26	10.1	12.1	22.3
Satisfactory	4	37	14.4	17.2	39.5
Satisfactory	5	65	25.3	30.2	69.8
Excellent	6	48	18.7	22.3	92.1
Excellent	7	17	6.6	7.9	100.0
	99	42	16.3	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
14	.00	*****
0	1.00	
8	2.00	*****
26	3.00	*****
37	4.00	*****
65	5.00	*****
48	6.00	*****
17	7.00	*****

I.....I.....I.....I.....I.....I
0.....15.....30.....45.....60.....75
HISTOGRAM FREQUENCY

MEAN	4.530	MEDIAN	5.000	MODE	5.000
STD DEV	1.718	MINIMUM	.000	MAXIMUM	7.000

(38) Adequate stock of base service store items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	2	.8	.8	.8
Poor	1	4	1.6	1.6	2.4
Poor	2	19	7.4	7.6	10.0
Satisfactory	3	37	14.4	14.9	24.9
Satisfactory	4	43	16.7	17.3	42.2
Satisfactory	5	70	27.2	28.1	70.3
Excellent	6	55	21.4	22.1	92.4
Excellent	7	19	7.4	7.6	100.0
	99	8	3.1	MISSING	
TOTAL		257	100.0	100.0	

COUNT	VALUE	ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES
2	.00	*
4	1.00	***
19	2.00	*****
37	3.00	*****
43	4.00	*****
70	5.00	*****
55	6.00	*****
19	7.00	*****

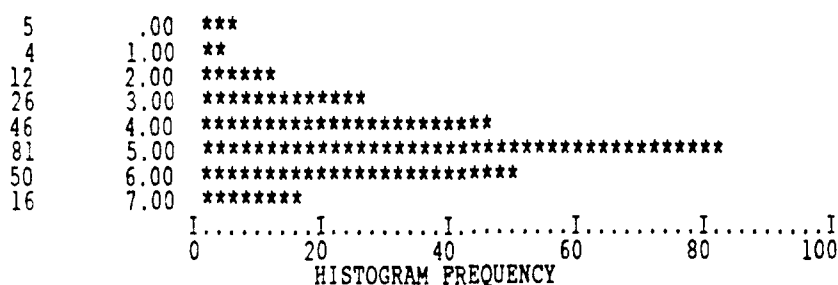
I.....I.....I.....I.....I.....I
0.....15.....30.....45.....60.....75
HISTOGRAM FREQUENCY

MEAN	4.570	MEDIAN	5.000	MODE	5.000
STD DEV	1.504	MINIMUM	.000	MAXIMUM	7.000

(39) Adequate stock of individual equipment items.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	0	5	1.9	2.1	2.1
Poor	1	4	1.6	1.7	3.8
Poor	2	12	4.7	5.0	8.8
Satisfactory	3	26	10.1	10.8	19.6
Satisfactory	4	46	17.9	19.2	38.8
Satisfactory	5	81	31.5	33.8	72.5
Excellent	6	50	19.5	20.8	93.3
Excellent	7	16	6.2	6.7	100.0
	99	17	6.6	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 2.00 OCCURRENCES

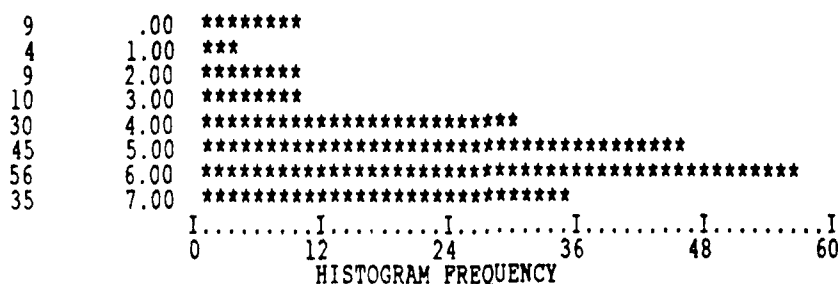


MEAN	4.613	MEDIAN	5.000	MODE	5.000
STD DEV	1.482	MINIMUM	.000	MAXIMUM	7.000

(40) Ability to expedite MICAP requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	9	3.5	4.5	4.5
Poor	1	4	1.6	2.0	6.6
Poor	2	9	3.5	4.5	11.1
Satisfactory	3	10	3.9	5.1	16.2
Satisfactory	4	30	11.7	15.2	31.3
Satisfactory	5	45	17.5	22.7	54.0
Excellent	6	56	21.8	28.3	82.3
Excellent	7	35	13.6	17.7	100.0
	99	59	23.0	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.20 OCCURRENCES

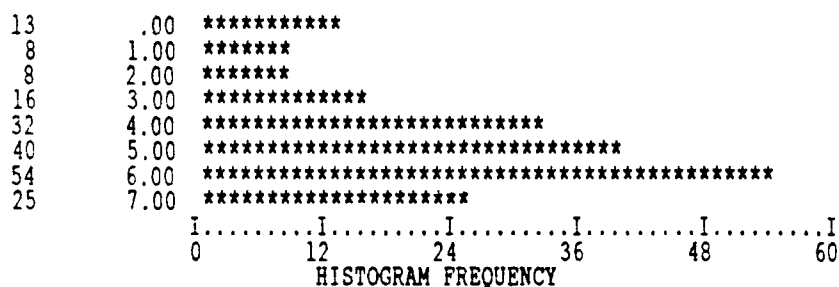


MEAN	4.939	MEDIAN	5.000	MODE	6.000
STD DEV	1.796	MINIMUM	.000	MAXIMUM	7.000

(41) Ability to expedite out of the ordinary MICAP requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	13	5.1	6.6	6.6
Poor	1	8	3.1	4.1	10.7
Poor	2	8	3.1	4.1	14.8
Satisfactory	3	16	6.2	8.2	23.0
Satisfactory	4	32	12.5	16.3	39.3
Satisfactory	5	40	15.6	20.4	59.7
Excellent	6	54	21.0	27.6	87.2
Excellent	7	25	9.7	12.8	100.0
	99	61	23.7	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.20 OCCURRENCES

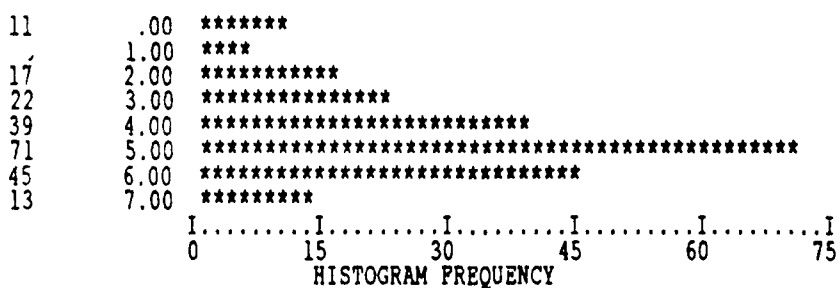


MEAN	4.587	MEDIAN	5.000	MODE	6.000
STD DEV	1.950	MINIMUM	.000	MAXIMUM	7.000

(42) Ability to expedite non-MICAP requests when necessary.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	11	4.3	4.9	4.9
Poor	1	6	2.3	2.7	7.6
Poor	2	17	6.6	7.6	15.2
Satisfactory	3	22	8.6	9.8	25.0
Satisfactory	4	39	15.2	17.4	42.4
Satisfactory	5	71	27.6	31.7	74.1
Excellent	6	45	17.5	20.1	94.2
Excellent	7	13	5.1	5.8	100.0
	99	33	12.8	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

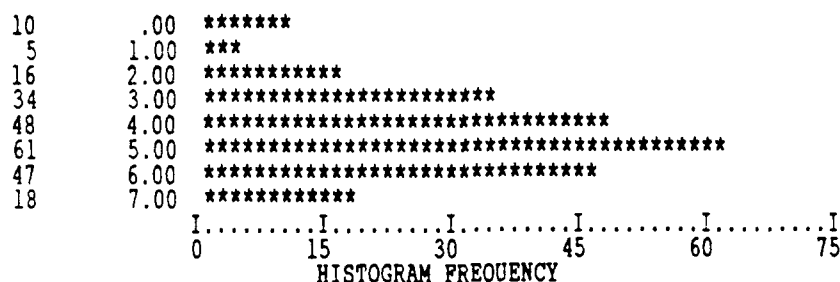


MEAN	4.366	MEDIAN	5.000	MODE	5.000
STD DEV	1.718	MINIMUM	.000	MAXIMUM	7.000

(43) Ability to handle out of the ordinary delivery requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	10	3.9	4.2	4.2
Poor	1	5	1.9	2.1	6.3
Poor	2	16	6.2	6.7	13.0
Satisfactory	3	34	13.2	14.2	27.2
Satisfactory	4	48	18.7	20.1	47.3
Satisfactory	5	61	23.7	25.5	72.8
Excellent	6	47	18.3	19.7	92.5
Excellent	7	18	7.0	7.5	100.0
	99	18	7.0	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

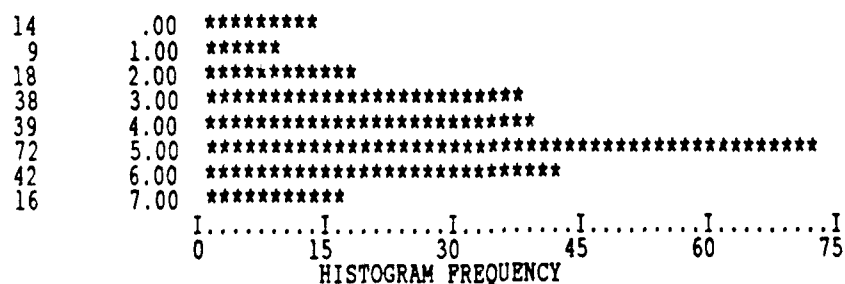


MEAN	4.368	MEDIAN	5.000	MODE	5.000
STD DEV	1.692	MINIMUM	.000	MAXIMUM	7.000

(44) Ability to expedite out of the ordinary local purchase requests.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	14	5.4	5.6	5.6
Poor	1	9	3.5	3.6	9.3
Poor	2	18	7.0	7.3	16.5
Satisfactory	3	38	14.8	15.3	31.9
Satisfactory	4	39	15.2	15.7	47.6
Satisfactory	5	72	28.0	29.0	76.6
Excellent	6	42	16.3	16.9	93.5
Excellent	7	16	6.2	6.5	100.0
	99	9	3.5	MISSING	
TOTAL		257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES



MEAN	4.190	MEDIAN	5.000	MODE	5.000
STD DEV	1.789	MINIMUM	.000	MAXIMUM	7.000

(45) Ability to provide training programs to suit the needs of your organization.

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
Not Provided	0	11	4.3	4.5	4.5
Poor	1	4	1.6	1.6	6.1
Poor	2	15	5.8	6.1	12.2
Satisfactory	3	40	15.6	16.3	28.6
Satisfactory	4	42	16.3	17.1	45.7
Satisfactory	5	64	24.9	26.1	71.8
Excellent	6	46	17.9	18.8	90.6
Excellent	7	23	8.9	9.4	100.0
	99	12	4.7	MISSING	
	TOTAL	257	100.0	100.0	

COUNT VALUE ONE SYMBOL EQUALS APPROXIMATELY 1.50 OCCURRENCES

11	.00	*****
4	1.00	***
15	2.00	*****
40	3.00	*****
42	4.00	*****
64	5.00	*****
46	6.00	*****
23	7.00	*****

I.....I.....I.....I.....I.....I.....I

0 15 30 45 60 75

HISTOGRAM FREQUENCY

MEAN	4.404	MEDIAN	5.000	MODE	5.000
STD DEV	1.726	MINIMUM	.000	MAXIMUM	7.000

Appendix E: Mean And Standard Deviation Scores
Of Importance Measurements

Description	Variable	Mean	SD
A commitment to providing the best service possible. (13)	General Service	6.50	.73
A commitment to customer satisfaction. (14)	General Service	6.47	.76
Competence. (26)	Demeanor Of Supply Rep	6.41	.74
Ability to solve your problem. (22)	Demeanor of Supply Rep	6.40	.71
Ability to expedite MICAP requests. (46)	Responsiveness	6.35	.99
Fulfill promises made. (23)	Demeanor Of Supply Rep	6.28	.94
A good working relationship with your organization. (12)	General Service	6.24	.87
Professionalism. (25)	Demeanor Of Supply Rep	6.20	.84
Minimum variation between <u>required</u> and <u>actual</u> delivery dates on MICAP items. (40)	Order Cycle Time	6.22	1.15
Ability to expedite out of the ordinary MICAP requests. (47)	Responsiveness	6.18	1.04
Ability to meet required delivery times on <u>items</u> <u>available in stock</u> . (37)	Order Cycle Time	6.08	1.02

Description	Variable	Mean	SD
A method for handling customer complaints. (8)	General Service	6.04	.94
A concern about your problem. (28)	Demeanor Of Supply Rep	6.04	1.01
Availability of bench stock items when needed. (42)	Item Availability	6.01	1.05
Minimum variation between projected and actual delivery dates on items procured from depot. (38)	Order Cycle Time	5.92	1.05
Ease and simplicity of order form (AF Form 2005, DD Form 1348-6). (29)	Order Processing	5.74	1.03
Courtesy in Person. (20)	Demeanor of Supply Rep	5.83	.91
Availability of supply point items when needed. (43)	Item Availability	5.85	1.05
Assistance in searching for a part number or stock number. (31)	Order Processing	5.78	1.26
Ability to meet required delivery dates on local purchase items. (39)	Order Cycle Time	5.85	1.06
An enthusiastic attitude. (27)	Demeanor of Supply Rep	5.80	1.02
Clear guidance on local purchase procedures. (36)	Order Processing	5.76	1.07
Accessability to the NCOIC or OIC when needed to resolve a problem. (9)	General Service	5.77	1.11

Description	Variable	Mean	SD
Courtesy on the phone. (19)	Demeanor of Supply Rep	5.70	.97
Ability to expedite non-micap requests when necessary. (48)	Responsiveness	5.70	.96
Fill rate on base level stock items (% of orders received complete the first time. (41)	Item Availability	5.69	1.07
Military bearing and appearance. (21)	Demeanor of Supply Rep	5.68	1.21
Clear guidance on due in from maintenance (DIFM) procedures. (35)	Order Processing	5.66	1.28
Availability of more than one phone line for placing orders. (32)	Order Processing	5.63	1.21
Ability to handle out of the ordinary delivery requests. (49)	Responsiveness	5.59	1.00
Ability to handle the customer's anger or frustration. (24)	Demeanor of Supply Rep	5.50	1.18
Ability to provide training programs to suit the needs of your organization (DIFM management, equipment management, etc.) (51)	Responsiveness	5.60	1.15
Availability of remote order transmission (computer to computer order entry). (33)	Order Processing	5.51	1.23
Time required to fill out order form. (30)	Order Processing	5.28	1.25
Adequate stock of base service store items. (44)	Item Availability	5.42	1.23

Description	Variable	Mean	SD
Ability to expedite out of the ordinary local purchase requests. (50)	Responsiveness	5.41	1.07
Accessibility of Base Service Store and Individual Equipment Unit. (10)	General Service	5.18	1.27
Promptness in answering the telephone. (7)	General Service	5.11	1.28
Adequate stock of individual equipment items. (45)	Item Availability	5.22	1.22
No restriction on number of orders that can be placed over the phone. (34)	Order Processing	4.96	1.60
Visits to your organization to ensure adequate support is being provided. (11)	General Service	4.47	1.53

Appendix F: Mean And Standard Deviation Scores
Of Performance Ratings Given to Base
Supply On All Criteria Used In Study

Description	Variable	Mean	SD
Accessibility of Base Service Store and Individual Equipment Unit. (10)	General Service	5.46	1.22
Courtesy in Person. (20)	Demeanor of Supply Rep	5.37	1.27
Military bearing and appearance. (21)	Demeanor of Supply Rep	5.29	1.22
Professionalism. (25)	Demeanor Of Supply Rep	5.23	1.33
Courtesy on t he phone. (19)	Demeanor of Supply Rep	5.23	1.33
Promptness in answering the telephone. (7)	General Service	5.13	1.32
A good working relationship with your organization. (12)	General Service	5.01	1.53
Competence. (26)	Demeanor Of Supply Rep	4.99	1.51
Ability to expedite MICAP requests. (46)	Responsiveness	4.94	1.80
Ability to solve your problem. (22)	Demeanor of Supply Rep	4.91	1.53
Time required to fill out order form. (30)	Order Processing	4.84	1.53
Assistance in searching for a part number or stock number. (31)	Order Processing	4.88	1.75

Description	Variable	Mean	SD
A commitment to providing the best service possible. (13)	General Service	4.87	1.57
Accessibility to the NCOIC or OIC when needed to resolve a problem. (9)	General Service	4.82	1.64
Fulfill promises made. (23)	Demeanor Of Supply Rep	4.69	1.72
Ease and simplicity of order form (AF Form 2005, DD Form 1348-6). (29)	Order Processing	4.73	1.65
A method for handling customer complaints. (8)	General Service	4.73	1.55
A commitment to customer satisfaction. (14)	General Service	4.77	1.61
Availability of more than one phone line for placing orders. (32)	Order Processing	4.63	1.80
Clear guidance on due in from maintenance (DIFM) procedures. (35)	Order Processing	4.55	1.73
Ability to meet required delivery times on <u>items available in stock</u> . (37)	Order Cycle Time	4.66	1.60
Fill rate on base level stock items (% of orders received complete the first time. (41)	Item Availability	4.68	1.39
An enthusiastic attitude. (27)	Demeanor of Supply Rep	4.66	1.52

Description	Variable	Mean	SD
Ability to expedite out of the ordinary MICAP requests. (47)	Responsiveness	4.59	1.95
A concern about your problem. (28)	Demeanor Of Supply Rep	4.63	1.62
Adequate stock of individual equipment items. (45)	Item Availability	4.61	1.48
Adequate stock of base service store items. (44)	Item Availability	4.57	1.50
Clear guidance on local purchase procedures. (36)	Order Processing	4.55	1.50
Ability to handle the customer's anger or frustration. (24)	Demeanor of Supply Rep	4.55	1.76
Availability of supply point items when needed. (43)	Item Availability	4.53	1.72
Ability to provide training programs to suit the needs of your organization (DIFM management, equipment management, etc. (51)	Responsiveness	4.40	1.73
Ability to expedite non-micap requests when necessary. (48)	Responsiveness	4.37	1.72
Ability to handle out of the ordinary delivery requests. (49)	Responsiveness	4.37	1.70
Availability of bench stock items when needed. (42)	Item Availability	4.35	1.77

Description	Variable	Mean	SD
Ability to expedite out of the ordinary local purchase requests. (50)	Responsiveness	4.21	1.77
Availability of remote order transmission (computer to computer order entry). (33)	Order Processing	4.27	2.10
Minimum variation between <u>required</u> and <u>actual</u> delivery dates on MICAP items. (40)	Order Cycle Time	4.18	2.04
Ability to meet required delivery dates on local purchase items. (39)	Order Cycle Time	4.16	1.67
Minimum variation between projected and actual delivery dates on items procured from depot. (38)	Order Cycle Time	4.04	1.58
No restriction on number of orders that can be placed over the phone. (34)	Order Processing	4.02	1.93
Visits to your organization to ensure adequate support is being provided. (11)	General Service	3.33	1.87

Appendix G: Comparison Of Importance And
Performance Ratings For Customer
Service Criteria

Criterion	<u>Importance</u> Mean/S.D.	<u>Performance</u> Mean/S.D	t-value
A. GENERAL SERVICE			
Promptness in answering the telephone.	5.11/1.28	5.13/1.32	-.18
A method for handling customer complaints.	6.04/.94	4.73/1.55	12.23*
Accessibility to the NCOIC or OIC when needed to resolve a problem.	5.77/1.11	4.82/1.64	8.10*
Accessibility of Base Service Store and Individual Equipment Unit.	5.18/1.27	5.46/1.22	-2.92*
Visits to your organization to ensure adequate support is being provided.	4.47/1.53	3.33/1.87	7.94*
A good working relationship with your organization.	6.24/.87	5.01/1.53	12.68*
A commitment to providing the best service possible.	6.50/.73	4.87/1.57	15.34*
A commitment to customer satisfaction.	6.47/.762	4.77/1.61	15.30*
C. DEMEANOR OF SUPPLY REPRESENTATIVES			
Courtesy on the phone .	5.70/.97	5.23/1.33	5.30*
Courtesy in person.	5.83/.91	5.37/1.27	5.25*

Criterion	<u>Importance</u> Mean/S.D.	<u>Performance</u> Mean/S.D	t-value
Military bearing and appearance .	5.68/1.21	5.29/1.22	4.01*
Ability to solve your problem.	6.40/.71	4.91/1.53	14.09*
Fulfill promises made.	6.28/.94	4.69/1.72	13.48*
Ability to handle the customer's anger or frustration.	5.50/1.18	4.55/1.76	7.12*
Professionalism.	6.20/.84	5.23/1.33	10.56*
Competence.	6.41/.74	4.99/1.51	13.77*
An enthusiastic attitude.	5.80/1.02	4.66/1.52	10.93*
A concern about your problem.	6.04/1.01	4.63/1.62	12.39*
D. ORDER PROCESSING			
Ease and simplicity of order form (AF Form 2005, DD Form 1348-6).	5.74/1.03	4.73/1.65	8.26*
Time required to fill out order form.	5.28/1.25	4.84/1.53	3.50*
Assistance in searching for a part number or stock number.	5.78/1.26	4.38/1.75	7.07*
Availability of more than one phone line for placing orders.	5.63/1.21	4.63/1.80	7.18*
Availability of remote order transmission (computer to computer order entry).	5.51/1.23	4.27/2.10	7.47*

Criterion	<u>Importance</u> Mean/S.D.	<u>Performance</u> Mean/S.D	t-value
No restriction on number of orders that can be placed over the phone.	4.96/1.60	4.02/1.93	5.46*
Clear guidance on due in from maintenance (DIFM) procedures.	5.66/1.28	4.55/1.73	8.38*
Clear guidance on local purchase procedures.	5.76/1.07	4.55/1.50	10.29*
D. ORDER CYCLE TIME (from order submission to delivery)			
Ability to meet required delivery times on <u>items available in base stock</u> .	6.08/1.02	4.66/1.60	11.90*
Minimum variation between <u>projected and actual delivery dates on items procured from depot</u> .	5.92/1.05	4.04/1.58	14.79*
Ability to meet required delivery dates on <u>local purchase items</u> .	5.85/1.06	4.16/1.67	13.51*
Minimum variation between <u>required and actual delivery dates on MICAP items</u> .	6.22/1.15	4.18/2.04	13.35*
E. ITEM AVAILABILITY			
Fill rate on base level stock items (% of orders received complete the first time).	5.69/1.07	4.68/1.39	8.76*
Availability of bench stock items when needed.	6.01/1.05	4.35/1.77	12.19*

Criterion	<u>Importance</u> Mean/S.D.	<u>Performance</u> Mean/S.D	t-value
Availability of supply point items when needed.	5.85/1.05	4.53/1.72	9.82*
Adequate stock of base service store items.	5.42/1.23	4.57/1.50	7.08*
Adequate stock of individual equipment items.	5.22/1.22	4.61/1.48	5.23*
F. RESPONSIVENESS			
Ability to expedite MICAP requests.	6.35/.99	4.94/1.80	11.07*
Ability to expedite out of the ordinary MICAP requests.	6.18/1.04	4.59/1.95	11.05*
Ability to expedite non-micap requests when necessary.	5.70/.96	4.37/1.72	10.82*
Ability to handle out of the ordinary delivery requests.	5.59/.997	4.37/1.70	10.70*
Ability to expedite out of the ordinary local purchase requests.	5.41/1.07	4.21/1.77	9.45*
Ability to provide training programs to suit the needs of your organization (DIFM management, equipment management, etc.).	5.60/1.15	4.40/1.73	9.27*

*Indicates a statistically significant difference at the $p < .005$ level.

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13. ABSTRACT (Maximum 200 words) The general purpose of this study was to evaluate the perceptions of (TAC) Base Supply major customers. The research had five major objectives: 1) identify the service criteria important to the major customers of TAC Base Supply; 2) identify their perceptions of Base Supply performance; 3) measure the range of variation between customer segments; 4) identify opportunities available to Base Supply for improving customer satisfaction; and 5) provide a benchmark for future evaluations of Base Supply customer satisfaction. The research methodology developed to meet the research objectives was based on that used by the leading experts in the field of customer service. The research identified a total of 20 criteria rated as very important to TAC supply major customers. In addition, the findings suggested that the majority of major customers perceived significant shortfalls in Base Supply Support. The identification of important criteria and the evaluation of perceptions of performance highlighted the opportunities available to TAC Base Supply for improving customer service satisfaction of its major customer base. This study provided additional evidence of the importance of customer service, and it provided a benchmark for evaluating Base Supply customer satisfaction.				
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